

Appendix F

SANDAG's State Route V/C Ratio Formulas

RE: County 2030 Cumulative run - Fallbook map question

From: **Calandra, Mike** (mca@sandag.org)

Sent: Tue 12/30/08 3:08 PM

To: 'Justin Rasas' (justin@losengineering.com)

Cc: 'Nick Ortiz' (francisco.ortiz@sdcounty.ca.gov); 'Bob Citrano' (robert.citrano@sdcounty.ca.gov); Yu,

Limeng (lyu@sandag.org)

Justin, below is the V/C lookup table we use to define LOS in the transportation model:

LOS A	0.00 - 0.30
LOS B	0.31 - 0.50
LOS C	0.51 - 0.70
LOS D	0.71 - 0.85
LOS E	0.86 - 0.99
LOS F	1.00+

* **Mike Calandra**

* Senior Research Analyst

* San Diego Association of Governments

* 401 B St Suite 800

* San Diego, CA 92101

* (619) 699-6929 - phone, (619) 699-1905 - fax

* mca@sandag.org

* www.sandag.org

RE: County 2030 Cumulative run - Fallbook map question

From: **Calandra, Mike** (mca@sandag.org)

Sent: Mon 12/29/08 3:42 PM

To: 'Justin Rasas' (justin@losengineering.com); Yu, Limeng (lyu@sandag.org); Bob Citrano

(robert.citrano@sdcounty.ca.gov)

Cc: Nick Ortiz (francisco.ortiz@sdcounty.ca.gov)

Justin, let me try and clear some of this up for you:

1. The fields AMVOL and PMVOL are bi-directional 3 hour peak period volumes. If you apply the peak hour factors, the result is a bi-directional volume for one peak hour. This volume should probably be split into two, one for each direction. For each link, you should go through these 4 calculations and use the highest V/C value to define the LOS for State Routes ~
 - a. $IFTVLA / IFTCPA = V/C$ ratio for the AM in the FROM-TO direction
 - b. $ITFVLA / ITFCPA = V/C$ ratio for the AM in the TO-FROM direction
 - c. $IFTVLP / IFTCPP = V/C$ ratio for the PM in the FROM-TO direction
 - d. $ITFVLP / ITFCPP = V/C$ ratio for the PM in the TO-FROM direction

* **Mike Calandra**

* Senior Research Analyst

* San Diego Association of Governments

* 401 B St Suite 800

* San Diego, CA 92101

* (619) 699-6929 - phone, (619) 699-1905 - fax

* mca@sandag.org

* www.sandag.org

Appendix G

SANDAG's 2006 *CMP* Update excerpts & Caltrans Flow Rates

2006 CONGESTION MANAGEMENT PROGRAM UPDATE

JULY 2006

This report was financed with federal funds from the U.S. Department of Transportation, Federal Highway Administration, and state funds from the California Department of Transportation



401 B Street, Suite 800 • San Diego, CA 92101-4231 • (619) 699-1900

Exhibit D-1
Level of Service (LOS) Definitions
 (Generally used by Caltrans)

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A Level of Service¹ definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. Levels of Service definitions can generally be categorized as follows:

LOS	D/C ²	Congestion/Delay	Traffic Description
(Used for freeways, expressways and conventional highways ³)			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for conventional highways)			
"F"	>1.00	Considerable	Forced or breakdown. Delay measured in average flow, travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F0"	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe 3+ hours of delay	Gridlock.

¹ Level of Service can generally be calculated using "Table 3.1. LOS Criteria for Basic Freeway Sections" from the latest Highway Capacity Manual. However, contact Caltrans for more specific information on determining existing "free-flow" freeway speeds.

² Demand/Capacity ratio used for forecasts (V/C ratio used for operational analysis, where V = volume)

³ Arterial LOS is based upon average "free-flow" travel speeds, and should refer to definitions in Table 11.1 in the HCM.



**GUIDE FOR THE PREPARATION
OF
TRAFFIC IMPACT STUDIES**

**STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

December 2002

Transition between LOS "C" and LOS "D" Criteria (Reference Highway Capacity Manual)

BASIC FREEWAY SEGMENTS @ 65 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	65.0	0.30	710
B	18	65.0	0.50	1170
C	26	64.6	0.71	1680
D	35	59.7	0.89	2090
E	45	52.2	1.00	2350

SIGNALIZED INTERSECTIONS and RAMP TERMINALS

LOS	Control Delay per Vehicle (sec/veh)
A	≤ 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

MULTI-LANE HIGHWAYS @ 55 mi/hr

LOS	Maximum Density (pc/mi/ln)	Minimum Speed (mph)	Maximum v/c	Maximum Service Flow Rate (pc/hr/ln)
A	11	55.0	0.29	600
B	18	55.0	0.47	990
C	26	54.9	0.68	1430
D	35	52.9	0.88	1850
E	41	51.2	1.00	2100

..... Dotted line represents the transition between LOS "C" and LOS "D"

Appendix H

Internal Capture Rate Support Data



LOS Engineering, Inc.
Traffic and Transportation

5114 Sea Mist Ct, San Diego, CA 92121
Phone 619-890-1253, Fax 619-374-7247

December 11, 2007

Mr. Nick Ortiz
County of San Diego DPW
5469 Kearny Villa Road, Suite 305
San Diego, CA 92123-1159

SUBJECT: Series 11 Internal Capture Rate Findings for Campus Park (TM 5338) and Meadowood (TM 5354)

Dear Mr. Ortiz:

The purpose of this letter is to request approval of a 33% internal capture rate from a SANDAG Series 11 year 2030 traffic model for use in the traffic impact study for Campus Park and Meadowood.

The cordons defining the 33% internal capture rate and the Traffic Analysis Zone (TAZs) making up the internal capture rate area are shown in **Attachment A**. The internal capture rate difference from 100% will define the 67% that will leave the internal study roadways. The internal study roadways will have 100% project assignment.

A search of on-line and printed material was conducted to determine if the aforementioned internal capture rate is reasonable. The Institute of Transportation Engineers (ITE) has aggregated multiple papers documenting internal capture rates for isolated communities. An average internal capture rate of 37% was calculated from three papers that covered 10 communities. A summary is shown in **Table 1** with the ITE compilation of papers included in **Attachment B**.

Table 1: Other Documented Internal Capture Rates

Report and Details	Internal Capture Rate
<u>FDOT Districtwide Trip Generation Study, March 1995</u>	
Crocker Center	41%
Mizner Park	40%
Galleria Area	38%
Contry Isles	33%
Village Commons	28%
Boca Del Mar	33%
<u>FDOT Characteristics Study, Dec 1993</u>	
Average of three sites (range 28%-33%)	31%
<u>JHK Brandermill PUD Traffic Generation Study, June 1984</u>	
Brandermill Virginia	51%
Average Internal Capture Rate from ITE Sources	37%

The internal capture rate area includes four projects that create a small community with complementing land uses. The latest proposed land uses were obtained for the four projects as shown in **Table 1**.

Table 1: Community Land Uses Making Up the Internal Capture Rate Area

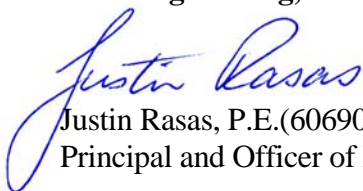
Series 11 TAZ	Project & Land Use	Size	Units	Trip Rate	ADT
4606	Campus Park Single Family	529	DU	10 ADT/DU	5,290
	Multi Family	187	DU	8 ADT/DU	1,496
4607	Campus Park Mixed Commercial	72,000	SF	120 ADT/KSF	8,640
	Professional Office	157,000	SF	20 ADT/KSF	3,140
4609	Campus Park Neighborhood Park	10.6	Acres	5 ADT/Ac	53
	Meadowood Elementary School	12.7	Acres	90 ADT/Ac	1,143
	Neighborhood Park	10	Acres	5 ADT/Ac	50
4610	Meadowood Single Family	355	DU	10 ADT/DU	3,550
	Multi Family	503	DU	8 ADT/DU	4,024
	Campus Park Multi Family	280	DU	8 ADT/DU	2,240
	Campus Park West Multi Family	395	DU	8 ADT/DU	3,160
4608	Palomar (Fallbrook College) Community College (1)	120	Acres	Unknown	3,500
110	Campus Park West (2)				
	Mixed Commercial	230,000	SF	120 ADT/KSF	27,600
	Professional Office	300,000	SF	20 ADT/KSF	6,000
	Campus Park Highway Commercial	140,000	SF	120 ADT/KSF	16,800
Total ADTs					86,686

Notes: (1) College ADT from RBF - traffic consultant that prepared the traffic study for Fallbrook College.

(2) Additional Campus Park West land uses are also proposed south of SR-76. The aforementioned Campus Park West land uses are only proposed north of SR-76.

Your timely review and approval of the aforementioned internal capture rate would be greatly appreciated. Please call me at (619) 890-1253 if you have any questions.

Sincerely,
LOS Engineering, Inc.



Justin Rasas, P.E.(60690), PTOE
Principal and Officer of LOS Engineering, Inc.

cc: Mr. Maurice Eaton (Caltrans)

ATTACHMENT A

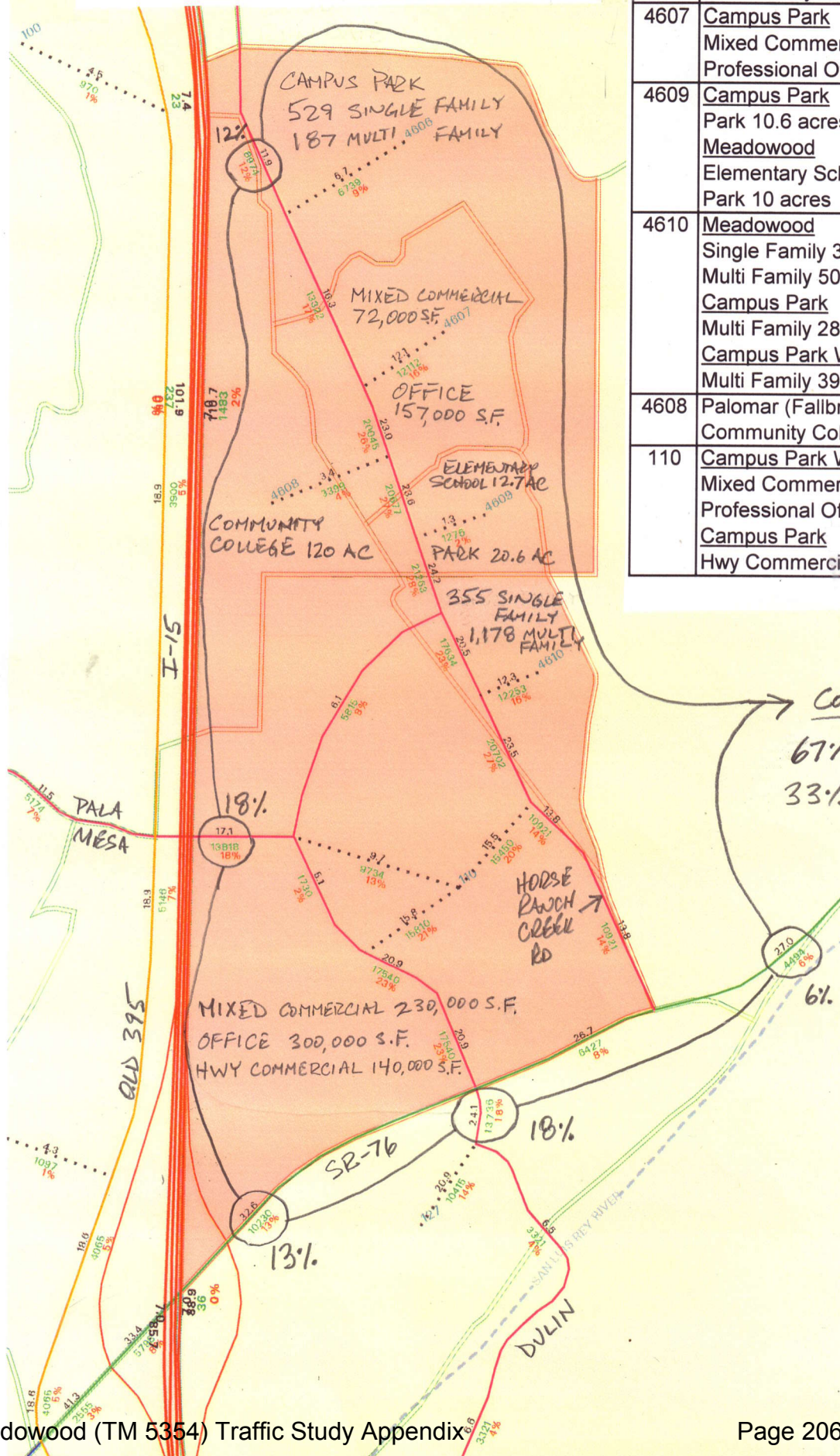
SANDAG SERIES 11 YEAR 2030 TRAFFIC MODEL

SANDAG Series 11 (Year 2030)

Run date = 12/7/07

TOTAL PRODUCTIONS & ATTRACTIONS

TAZ	Project & Land Use	ADT
4606	Campus Park Single Family 529 Units Multi Family 187 Units	5,290 1,496
4607	Campus Park Mixed Commercial 72 KSF Professional Office 157 KSF	8,640 3,140
4609	Campus Park Park 10.6 acres Meadowood Elementary School Park 10 acres	53 1,143 50
4610	Meadowood Single Family 355 Units Multi Family 503 Units Campus Park Multi Family 280 Units Campus Park West Multi Family 395 Units	3,550 4,024 2,240 3,160
4608	Palomar (Fallbrook College) Community College 120 ac	3,500
110	Campus Park West Mixed Commercial 230 KSF Professional Office 300 KSF Campus Park Hwy Commercial 140 KSF	27,600 6,000 16,800
Total ADTs		86,686



ATTACHMENT B

ITE SUMMARY OF LITERATURE ON MULTI-USE DEVELOPMENTS

Summary of Literature on Multi-Use Developments

This appendix includes material that is strictly for informational purposes. It provides no recommended practices, procedures, or guidelines.

C.1 Background

Presented below are summaries of key quantitative and qualitative findings from known data bases on trip characteristics at multi-use sites. For each study, data are presented (as available) on the mix and sizes of land uses within the site, the level of internalization of trips within the site, overall trip generation characteristics for the site, and the level of pass-by trips for the site. In most cases, the analyses use

ITE defined independent variables. In several cases, new variables are introduced.

1 Districtwide Trip Generation Study, Florida Department of Transportation, District IV, March 1995

The Florida Department of Transportation (FDOT) sponsored this study for two reasons: first, to develop a data base that could help identify internal capture rates for multi-use development sites; and second, to develop a data base from which pass-by capture rates could be established.

A summary of the characteristics of the six surveyed multi-use sites is

presented in table C.1. The sites range in area from 26 to 253 acres (with four of the sites being 72 acres or less). The office/commercial square footage ranges between 250,000 and 1.3 million square feet (with three of the sites having less than 300,000 square feet).

Internal Trips

The proportion of daily trips generated within the surveyed multi-use sites that were internal to the sites are listed in table C.2. The internal capture rates ranged between 28 and 41 percent, with an average of 36 percent across the six sites.

Table C.1 Characteristics of Multi-Use Sites Surveyed by FDOT

MULTI-USE SITE	SITE SIZE (ACRES)	OFFICE (SQ. FOOTAGE)	COMMERCIAL (SQ. FOOTAGE)	HOTEL (ROOMS)	RESIDENTIAL (UNITS)
Crocker Center	26	209,000	87,000	256	0
Mizner Park	30	88,000	163,000	0	136
Galleria Area	165	137,000	1,150,000	229	722
Country Isles	61	59,000	193,000	0	368
Village Commons	72	293,000	231,000	0	317
Boca Del Mar	253	303,000	198,000	0	1,144

Table C.2 Daily Internal Capture Rates at FDOT Sites

Multi-Use Development Site	Internal Capture Rate (percentage)
Crocker Center	41
Mizner Park	40
Galleria Area	38
Country Isles	33
Village Commons	28
Boca Del Mar	33
Overall Average	36

Three of the multi-use sites were further evaluated to determine the internal capture rates for different types of trip makers. As listed in table C.3, the internal capture rates

for trips made by site workers are typically higher than rates found for visitors to the site (i.e., users of the multi-use site services). The rates by trip maker are remarkably

consistent across all three sites. On average, 37 percent of user trips are internal and 47 percent of worker trips are internal to the multi-use site.

Table C.3 Internal Trip Capture Rates (Percentages) by Type of Trip Maker at FDOT Sites

Trip-Maker	Crocker Center	Mizner Park	Galleria Area	Average
Users	37	38	36	37
Workers	46	49	46	47
Total	41	40	38	40

Finally, three of the multi-use sites were further evaluated to determine the internal capture rates of individual land uses. Table C.4 lists the reported internal capture

rates by land use/trip purpose. In general, the higher internal capture rates were reported for trips to and from banks and sit-down restaurants.

**Table C.4 Internal Trip Capture Rates (Percentages)
by Land Use Type at FDOT Sites**

LAND USE/TRIP PURPOSE	CROCKER CENTER	MIZNER PARK	GALLERIA AREA
Office (General)	11	11	7
Office (Medical)	-	15	12
Retail	36	30	42
Restaurant (Sit-Down)	54	52	-
Restaurant (Fast)	26	-	56
Hotel	30	-	29
Bank	-	48	62
Cinema	-	23	-
Multi-Family Housing	-	11	50
Retail Mall	-	-	39

Vehicle Trip Generation

The actual vehicle trip generation rates measured at the six study sites are compared to the estimated trip generation rates based on ITE *Trip Generation*, Fifth Edition, data in table C.5. A value of less than 1.0 indicates that the number of actual overall vehicle trips generated is less than that predicted using ITE rates.

As shown in the first column of the table, the actual number of vehicle-trips generated by a multi-use site on a daily basis is substantially less than a number predicted using

ITE *Trip Generation* rates for each individual component of the site (i.e., disaggregated). In contrast, the actual trip generation on a daily basis roughly equals an estimate based on the "full-size" trip generation rates for the total square footage (or comparable independent variable) for all land uses by type within the site (i.e., aggregated). Even though a high percentage of internal trips was observed at all six sites (as documented earlier), there appears to be little effect on daily vehicle trip generation rates for the overall multi-use site.

In terms of a trip generation rate for the morning peak hour, an average of the measured rates equals the aggregated ITE *Trip Generation* rate (although the six sites demonstrated a much wider range of variability than was the case for daily trip generation). The evening peak hour trip generation rates are on average 20 percent less than the aggregate site estimate based on ITE rates. This reduction is consistent across the six study sites.

**Table C.5 Comparison Between Actual FDOT Vehicle Trip Generation
and an Estimate from ITE Trip Generation**

Ratio of Actual Vehicle Trip Generation to ITE Estimate				
MULTI-USE SITE	TOTAL DAILY (DISAGGREGATED)	TOTAL DAILY (AGGREGATE)	A.M. PEAK HOUR (AGGREGATE)	P.M. PEAK HOUR (AGGREGATE)
Crocker Center	0.82	0.99	1.27	0.82
Mizner Park	1.13	1.07	0.73	0.77
Galleria Area	0.71	0.99	1.09	0.84
Country Isles	0.72	1.04	1.10	0.85
Village Commons	0.69	1.06	0.92	0.80
Boca Del Mar	0.70	0.98	1.06	0.73
Overall Average	0.77	1.02	1.00	0.80

Pass-By Trips

The pass-by trip proportions, as determined through intercept sur-

veys, are listed in table C.6 for the six study sites. It is perhaps most telling that four of the six sites are

reported to have pass-by rates between 26 and 29 percent.

Table C.6 Daily Pass-By Rates at FDOT Sites

MULTI-USE DEVELOPMENT SITE	DAILY PASS-BY RATE (PERCENTAGE)
Crocker Center	26
Mizner Park	29
Galleria Area	40
Country Isles	28
Village Commons	14
Boca Del Mar	29
Overall Average	28

2. FDOT Trip Characteristics Study of Multi-Use Developments, FDOT District IV, December 1993

This study was the predecessor of the March 1995 FDOT trip generation study. Much of the data that were collected and many of the relationships derived in this first study are included in the 1995 study results described above. However, the 1995 study did not report on two relationships presented in the 1993 report (summarized below).

Internal Trips

Relationships were developed for estimating internal trips as a function of the combination of two land use types in terms of residential

units and office/retail square footage. Strong relationships were developed for two internal trip type categories: between residential and retail uses and between retail and retail uses. The office-retail relationship was less definitive.

The study presented a working hypothesis that the number of internal trips from one land use type (A) to another land use (B) within a multi-use site is directly proportional to the size of land use A and also proportional to the size of land use B. This suggests a functional relationship of the form:

Person Trips between A and B = Constant x Land Use A x Land Use B where:

Land Use A = total site land use of type A in residential units or per 1,000 square feet,

Land Use B = total site land use of type B in residential units or per 1,000 square feet, and

Constant = a value that is solely a function of the two land use types.

In the equation shown above, the constant can be derived from information collected on person trips between different land use types and on the sizes of these different land uses. The derived constants are listed in table C.7.

Table C.7 Internal Trip Coefficients for Paired Land Use Types

PAIRED LAND USES	MIDDAY PEAK PERIOD (12 NOON - 2 P.M.)	EVENING PEAK PERIOD (4 P.M. - 6 P.M.)	DAILY
Residential/Retail	0.00082	0.00103	0.00557
Office/Retail	0.00087	0.00024	0.00232
Retail/Retail	0.01219	0.00995	0.07407

For example, application of these coefficients for a particular multi-use site with 1,144 residential dwelling units, 198,000 square feet of retail, and 303,000 square feet of office space would yield the following results:

◆ number of daily internal trip ends between residential and retail uses is 1,262 $[0.00557 \times 1,144 \text{ (residential units)} \times 198 \text{ (1,000 retail square footage)} = 1,262]$

◆ number of daily internal trip ends between office and retail uses is 139 $[0.00232 \times 303 \text{ (1,000 office$

square footage) $\times 198 \text{ (1,000 retail square footage)} = 139]$

◆ number of daily internal trip ends between retail and retail uses is 2,904 $[0.07407 \times 198 \text{ (1,000 retail square footage)} \times 198 \text{ (1,000 retail square footage)} = 2,904]$

This study also collected information on internal capture rates by time of day. Total internal capture rates for the three surveyed multi-use sites are shown in table C.8. The estimated daily midday and evening peak period internal capture rates are quite similar. The

daily internal capture rates range from 28 percent to 33 percent for the three survey sites (with an overall average of 31 percent). The midday and evening peak periods produced similar ranges for the three survey sites, 30 to 35 percent and 28 to 32 percent, respectively.

The mean values for the entire survey period shown in table C.8 have a high degree of statistical validity. Maximum two-tailed errors calculated using the binomial distribution, with 90 percent confidence level methodology, are all less than 5 percent.

Table C.8 Internal Person Trip Ends by Time of Day (Percentage)

TIME PERIOD	AVERAGE RECORDED AT THREE SITES	RANGE RECORDED AT THREE SITES
Daily	31	28 - 33
Midday Peak Period (12 noon - 2 P.M.)	32	30 - 35
Evening Peak Period (4 P.M. - 6 P.M.)	30	28 - 32

3. Trip Generation for Mixed-Use Developments, Technical Committee Report, Colorado-Wyoming Section, Institute of Transportation Engineers, January 1986.

This study was undertaken to determine how trip generation estimates using ITE rates compared to actual driveway counts at multi-use developments in Colorado and Wyoming. Also included were interviews to determine whether persons entering and leaving multi-

use sites came there for multiple purposes. The size and mix of land uses at the eight sites with interviews are listed in table C.9.

NO GOOD BECAUSE RESIDENTIAL WAS NOT INCLUDED.

Table C.9 Characteristics of Multi-Use Sites with Interviews

SITE	SIZE (SQUARE FEET)	LAND USES
1	240,917	Retail, General Office, Government Office, Restaurants, Health Club, Bank
2	731,846	Retail, Office, Restaurants, Hotel
3	500,000	Retail, Office, Restaurants, Motel, Theaters
4	115,000	Retail, Restaurants, Hardware Store, Supermarket
5	1,000,000	Regional Mall, Retail, Restaurants, Banks, Office, Theaters
6	110,000	Retail, Theaters, Restaurants, Banks
7	95,104	Retail, Restaurants, Supermarket, Medical Office, Savings & Loan
8	300,000	Retail, Hardware, Restaurants, Supermarkets, Post Office

Internal Trips

A key piece of information collected at the interview sites was the number of trip purposes that an interviewed person accomplished on the particular trip within the site. Overall, a majority (77 percent) of the interviewees indicated that their trip involved only a single stop within the multi-use site. However, this still left a significant proportion (23 percent) who indi-

cated they were making two or more stops within the site. Based on these interview results, the study authors estimated that 25 percent of an otherwise total number of trips were eliminated with the linking of internal trips within the eight surveyed multi-use sites.

Table C.10 presents the "number of trip purposes" data, arrayed according to the primary destina-

tion. This data gives the reader a sense for which land uses tend to generate multi-stop trips within multi-use sites. Office buildings and a post office generated the greatest number of multi-stop trips. Theaters, restaurants, and banks tended to generate lower-than-average numbers of multi-stop trips within the site.

Table C.10 Percentages of Persons within Multi-Sites by Number of Purposes (Stops) and by Primary Destination

PRIMARY DESTINATION	NUMBER OF PURPOSES/STOPS STATED BY INTERVIEWEE		
	1 PURPOSE (%)	2 PURPOSES (%)	3+ PURPOSES (%)
Bank/Savings and Loan	83	8	9
Hardware Store	76	22	2
Supermarket	77	17	6
Theater	93	7	0
Office/Work Site	68	31	1
Small Retail Shop	73	14	13
Restaurant	85	12	3
Health Club	71	29	0
Post Office	63	24	13
Total (Average)	77	16	7

Trip Generation

Vehicle trip generation data were collected at nine sites, as described in table C.11. During both the morning and evening peak hours for the generators within the nine multi-use sites, the actual vehicle counts were less than the calculated volumes from ITE *Trip Generation* rates. On a daily basis, six of the nine actual counts were also less.

Several of the surveyed sites are predominantly shopping centers (with some peripheral office or

hotel space within the site boundaries) for which trip reduction estimates are not truly valid. Table C.12 presents the comparisons between driveway counts and ITE *Trip Generation* estimates (for each disaggregated element of the site) for the three surveyed sites that best fit the traditional view of a multi-use site. The site numbers in the table correspond to site numbers used previously in table C.11.

The measured reduction in trips generated by the site (as an indirect

and perhaps direct result of an internal capture rate) varies considerably. As shown in table C.12, during the morning peak hour, the measured reduction at the three sites with internal trips ranged from 30 to 37 percent, with an average of 33 percent. The average reduction was 29 percent during the evening peak hour (with observed values ranging between 15 and 45 percent). Finally, on a daily basis the average reduction in vehicle trips was 13 percent (with a range between 9 and 20 percent).

Table C.11 Characteristics of Trip Generation Data Collection Sites

SITE	SIZE (SQUARE FEET)	LAND USES
1	154,536	Retail, Office, Government Office, Restaurants, Health Club
2	86,381	Retail, Restaurants, Bank
3	731,846	Retail, Office, Restaurants, Hotel
4	500,000	Retail, Office, Restaurants, Motel, Theaters
5	61,198	Retail, Office
6	115,000	Retail, Restaurants, Hardware Store, Supermarket
7	1,773,500	Office, Restaurants, Bank, Hotel, Medical Office, Training Center
8	177,277	Retail, Office, Medical Office, Restaurants, Health Club, Bank, Theater, Hardware Store, Supermarket, Savings & Loan
9	95,104	Retail, Restaurants, Bank, Supermarket, Medical Office, Savings & Loan

The measured driveway volumes show vehicle trip reductions that could be considered to approximate the 25 percent drop caused by internalization of trips. It was the researchers' conclusion that most of the secondary trip purposes indicat-

ed by interviewees occur because of the availability of multiple retail outlets in close proximity to major primary destinations, such as work locations, supermarkets, banks, restaurants, hotels, and theaters in multi-use developments. If the sec-

ondary destinations were not in close proximity to the primary destinations, trips to the secondary destinations would not occur or would occur at a much less frequent rate.

Table C.12 Comparison of ITE Trip Generation with Driveway Counts

SITE NO.	A.M. PEAK HOUR			P.M. PEAK HOUR			DAILY		
	ITE	COUNT	CHANGE	ITE	COUNT	CHANGE	ITE	COUNT	CHANGE
3	1,217	855	362 (30%)	1,491	821	670 (45%)	12,838	11,706	1,132 (9%)
4	922	640	282 (31%)	1,337	1,138	199 (15%)	15,119	13,718	1,401 (9%)
7	3,878	2,448	1,430 (37%)	4,019	2,891	1,128 (28%)	30,408	24,462	5,946 (20%)

4. Trip Generation at Special Sites, Virginia Transportation Research Council, Charlottesville, Virginia, VHTRC 84-R23, January 1984.

Driveway vehicle counts were taken at a multi-use site located in a densely developed area in the Northern Virginia suburbs of Washington, D.C. The multi-use site contains 606 rental units (555 of which are located in a high-rise, the remainder being multi-level townhouse units) and approxi-

mately 64,000 square feet of retail/office area (including a delicatessen, a commercial cleaning company office, two building contractor offices, a restaurant, a bank, a hospital consulting company, a direct-mail advertising firm, a real estate agency, a management consulting group, and a dentist). The site is served by transit.

Vehicle Trip Generation

Table C.13 presents a comparison between the measured trip rates at the site and the estimated trips calculated from the ITE *Trip Generation*, Fifth Edition rates.

Counts were taken (and trip generation estimates developed) for the morning peak hour, the evening peak hour, and the weekday daily time periods. The field-counted trips were 27 percent less than the ITE-calculated rates during the evening peak hour and 17 percent less during a 24-hour period. As has been stated in previous assessments of multi-use sites in this chapter, the reasons for this reduction could be twofold: (1) internalization of trips and (2) simple randomness of the actual trip generation rates.

NOT APPLICABLE AS REPORT CONCLUDES ON NEXT PAGE THAT INTERNAL TRIP RATES ARE NOT POSSIBLE TO ESTIMATE FROM A COMPARISON OF COUNTED VS. ITE-CALCULATED TRIP RATES.

Table C.13 Comparison of Actual and Counted Trip Ends

	A.M. PEAK HOUR (7 - 9 A.M.)	P.M. PEAK HOUR (4 - 6 P.M.)	DAILY
ITE Calculated	337	764	8,222
Field Counted	440	559	6,803
Difference from Calculated	103 Higher (31%)	205 Lower (27%)	1,419 Lower (17%)

Internal Trips

Trip-making at the site was only measured at its boundary. No internal counts or interviews were conducted. It is not possible to estimate internal trip rates directly from a comparison between counted and ITE-calculated vehicle trip rates. Nevertheless, all other factors being equal, it appears that the evening peak hour internal capture rate is greater than that during the morning peak hour.

The objective of this study was to develop a systematic procedure for estimating the traffic impact of multi-use developments. The recommended method from the research is based on the results of surveys at three multi-use sites. The general characteristics of the survey sites are presented in table C.14. For the purposes of this chapter, the Cross Keys development is the most representative of a multi-use site, although it is situated in an urban setting. Burke Center more closely resembles a small town or rural village, but its trip-making characteristics are nevertheless presented below. The Reston development stretches over 20 square miles and is not truly a multi-use development in the context of this handbook; its trip-making characteristics are not discussed further.

Internal Trips

The measured internal capture rates for individual land uses at the two applicable survey sites are listed in table C.15. Similar to findings in other studies, the internal capture rates are higher at office buildings for the evening peak than for the morning peak (because site workers are more likely to make secondary trips during the afternoon than in the morning). The high morning internal capture rate for the retail mall is not meaningful because it represents an inconsequential number of trips that would not typically be considered in a traffic impact analysis.

5. A Trip Rate Interaction Model for Mixed Land Use Developments, University of Maryland Department of Civil Engineering (Gang-Len Chang, Chao-Hua Chen, Everett C. Carter), and Maryland State Highway Administration, November 1992

NOT APPLICABLE AS REPORT IS UNCLEAR IF COUNTS INCLUDED RESIDENTIAL AREAS.

Table C.14 Characteristics of Survey Sites

	CROSS KEYS	BURKE CENTER	RESTON
Size	72 acres	1,700 acres	14,046 acres
Residences	942	19,643	56,188
Single-Purpose Office	104,841 sf (service-oriented)	17,254 sf (service-oriented)	294,000 (non-service)
Multi-Purpose Building	61,000 sf (bank, retail, office, medical)	—	847,950 sf (office, bank, retail, hotel, theater)
Retail	—	117,269 sf	—

Table C.15 Internal Trip Capture Rates at Individual Land Uses in Multi-Use Sites

	CROSS KEYS			BURKE CENTER		
	A.M. PEAK (7-9)	P.M. PEAK (4-5:30)	ALL DAY	A.M. PEAK (7-9)	P.M. PEAK (4-5:30)	ALL DAY
Single-Purpose Office (Service-Oriented)	4%	13%	8%	7%	17%	17%
Multi-Purpose Building	1%	27%	11%	—	—	—
Retail Mall	—	—	—	29%	17%	15%

The University of Maryland study reports vehicle trip generation at each survey site, but it is unclear whether or not the counts included the residential areas and whether or not some vehicle movements may have been double-counted.

Therefore, the results are not presented here. The University of Maryland study did not attempt to quantify pass-by trips.

6) The Brandermill PUD Traffic Generation Study, Technical Report, JHK & Associates, Alexandria, Virginia, June 1984.

Brandermill is a large, planned multi-use development (and, in many respects, is a small town/

village) located approximately 10 miles southwest of Richmond, Virginia. At the time of the study, there were approximately 2,300 occupied dwelling units, with 180 townhouse-style condominiums and 2,120 single-family detached units. Commercial development consisted of an 82,600-square foot shopping center, a 63,000-square foot business park, a 14,000-square foot medical center, and a 4,400-square foot restaurant. There were also recreational facilities, including a golf course, tennis courts, swimming facilities, and several lakeside recreation facilities. Finally, there was a day-care center, a church, an elementary school, and a middle school. The study

had the overall goal of determining the on-site (internal) and off-site (external) traffic generation at Brandermill.

Internal Trips

The split between internal and external trips was estimated on the basis of various data. As shown in table C.16, 51 percent of the daily trips, 55 percent of the evening peak hour trips, and 45 percent of the morning peak hour trips were internal to (or captured within) the multi-use site. Additionally, 46 percent of the persons employed in Brandermill also reside there.

Table C.16 Split Between Internal and External Trip Ends at Brandermill

	A.M. PEAK HOUR	P.M. PEAK HOUR	DAILY
Total Generated	2,570	2,935	33,540
External Trips	1,420	1,325	16,280
Internal Trips	1,150 (45%)	1,610 (55%)	17,260 (51%)

Travel questionnaires were distributed to residences and used to measure the level of internal trip ends for home-based trips. As shown in table C.17, roughly 35 percent of the daily home-based

trips from Brandermill residences are linked with trip ends within Brandermill. Over 39 percent of the daily trip ends to Brandermill residences start within Brandermill. For the shopping

center trips within Brandermill, roughly two-thirds of the trips originate within Brandermill during the midday and evening peak hours.

Table C.17 Internal Trip Ends Linked with Brandermill Residences and Retail Centers

HOURS	HOME-BASED TRIPS WITH DESTINATIONS WITHIN BRANDERMILL	HOME-BASED TRIPS WITH ORIGINS WITHIN BRANDERMILL
7 A.M. to 9 A.M.	18%	51%
9 A.M. to 4 P.M.	44%	50%
4 P.M. to 6 P.M.	55%	34%
6 P.M. to 7 A.M.	41%	34%
Daily	35%	39%

HOURS	SHOPPING CENTER TRIPS WITH DESTINATIONS WITHIN BRANDERMILL	SHOPPING CENTER TRIPS WITH ORIGINS WITHIN BRANDERMILL
11 A.M. to 1 P.M.	66%	65%
4 P.M. to 6 P.M.	66%	52%

7. Travel Characteristics at Large-Scale Suburban Activity Centers, JHK & Associates, NCHRP Report 323, 1990.

The objective of the project was to develop a comprehensive data base on travel characteristics for various types of large-scale, multi-use suburban activity centers (SAC).

The activity centers studied were very large and had a scale very different from typical multi-use development. Therefore, the findings of this study are applicable only in major activity centers.

Data were collected at the six suburban activity centers listed in table C.18. Following is a summary of findings pertinent to internal

trips for each of the land uses listed. It is noted that "larger centers" refers to the three centers with at least 15 million square feet of office/retail space, whereas "smaller centers" refers to the remaining three, which have less than 8 million square feet. A summary of some relevant relationships that were reported in NCHRP 323 is presented in table C.19.

Table C.18 Characteristics of NCHRP Report 323 Study Sites

SUBURBAN ACTIVITY CENTER	OFFICE SPACE		RETAIL SPACE		HOTEL ROOMS	RESIDENTIAL DWELLING UNITS
	GFA	EMPLOYEES	GLA	EMPLOYEES		
Bellevue (Washington)	4.7 million	12,880	3 million	6,150	1,000	N/A
South Coast Metro (Orange Co., California)	3.5 million	10,465	4 million	6,865	1,800	2,300
Tysons Corner (Fairfax Co., Virginia)	17.0 million	35,020	7 million	13,355	3,100	15,000
Parkway Center (Dallas, Texas)	13.0 million	39,000	2 million	3,430	1,800	206
Perimeter Center (Atlanta, Georgia)	13.0 million	32,500	3 million	5,150	910	2,000
Southdale (Minneapolis, Minnesota)	4.0 million	13,700	3 million	6,155	2,200	3,000

Table C.19 Internal Trip-Making Characteristics at NCHRP 323 Study Sites

	AVERAGE	RANGE
OFFICE EMPLOYEES		
% who make an intermediate stop		
• on the way to work	10%	7 - 15%
• on the way home from work	11%	6 - 16%
% who make midday trips internal to the activity center		
• SAC with high level of professional employment ¹	—	29 - 33%
• SAC with low level of professional employment	—	20 - 23%
OFFICE VISITORS — % from within activity center		
• A.M. Peak Period		
• all SAC	—	15 - 59%
• small SAC	30%	—
• large SAC	54%	—
• P.M. Peak Period		
• all SAC	—	15 - 68%
• small SAC	33%	—
• large SAC	58%	—
REGIONAL MALLS — % trips which are internal to SAC		
• Midday		
• all SAC	37%	7 - 68%
• small SAC	23%	—
• large SAC	47%	—
• P.M. Peak Period		
• all SAC	24%	7 - 57%
• small SAC	14%	—
• large SAC	31%	—
EMPLOYED RESIDENTS — % who work within SAC		
• all	—	13 - 50%
• small SAC	27%	—
• large SAC	33%	—
HOTEL TRIPS — % internal to SAC		
• A.M. Peak Period		
• all SAC	—	13 - 53%
• small SAC	19%	—
• large SAC	37%	—
• P.M. Peak Period		
• all SAC	—	15 - 46%
• small SAC	27%	—
• large SAC	36%	—

¹ Sites with at least 60 percent of the work force in professional, technical, managerial, or administrative positions.

C.2 References

Districtwide Trip Generation Study, Walter H. Keller, Inc., for the Florida Department of Transportation, District IV, March 1995.

FDOT Trip Characteristics Study of Multi-Use Developments, Tindale-Oliver and Associates, for FDOT District IV, December 1993.

Trip Generation for Mixed Use Developments, Technical Committee Report, Colorado-Wyoming Section, ITE, January 1986.

Trip Generation at Special Sites, VHTRC 84-R23, Charlottesville, VA: Virginia Transportation Research Council, January 1984.

A Trip Rate Interaction Model for Mixed Land Use Developments, Chang, G.L., Chen, C.H., and Carter, E.C. College Park, MD: University of Maryland Department of Civil Engineering, and Maryland State Highway Administration, Baltimore, MD, November 1992.

The Brandermill PUD Traffic Generation Study, Technical Report, Alexandria, VA: JHK & Associates, June 1984.

Travel Characteristics at Large-Scale Suburban Activity Centers, Hooper, K., National Cooperative Highway Research Program Report 323, Washington, DC: Transportation Research Board, National Academy of Sciences, 1990.



LOS Engineering, Inc.
Traffic and Transportation

5114 Sea Mist Ct, San Diego, CA 92121
 Phone 619-890-1253, Fax 619-374-7247

February 5, 2008

Mr. Nael Areigat
 County of San Diego DPW
 5201 Ruffin Road, Suite D
 San Diego, CA 92123-4310

RE: Campus Park (TM 5338) and Meadowood (TM 5354) – Internal Capture Rate

Dear Mr. Areigat:

Please find additional information supporting the SANDAG based 33% internal capture rate.

Comment #1: The letter should discuss how the proposed Campus Park and Meadowood projects plus the other two proposed eastern Fallbrook development projects (Campus Park West, Palomar College) compare to the sites surveyed/studied in the ITE internal capture rate documentation. The letter should compare/contrast the Fallbrook development projects to the ITE study sites as it relates to location, size, proximity to major freeways/highways, and land use composition. The letter should demonstrate that the ITE internal capture rates are applicable to the Fallbrook development projects.

Response #1: A comparison is shown between the sites documented in ITE and the combined project in **Table 1**:

Table 1: Composition Comparison of ITE Multi-Use Site to Proposed Project

Multi-Use Site	Location	Proximity to Freeway	Site Size (Acres)	Office (sf)	Commercial (sf)	Hotel (rooms)	Residential (Units)	Internal Capture Rate
Crocker Center	Florida	Unknown	26	209,000	87,000	256	0	41%
Mizner park	Florida	Unknown	30	88,000	163,000	0	136	40%
Galleria Area	Florida	Unknown	165	137,000	1,150,000	229	722	38%
Country Isles	Florida	Adjacent	61	59,000	193,000	0	368	33%
Village Commons	Florida	Unknown	72	293,000	231,000	0	317	28%
Boca Del Mar	Florida	Unknown	253	303,000	198,000	0	1,144	33%
Brandermill	Virginia	Adjacent	Unknown	77,000	87,000	0	2,300	51%
<i>Minimum</i>			26	59,000	87,000	0	0	28%
<i>Average</i>								38%
<i>Maximum</i>			253	303,000	1,150,000	256	2,300	51%
Meadowood	California	Adjacent	390	0	0	0	900	
Campus Park	California	Adjacent	165	157,000	72,000	0	1,096	
Campus Park West	California	Adjacent	92	300,000	230,000	0	395	
Palomar College	California	Adjacent	85	0	0	0	0	
<i>Combined Fallbrook projects (4 above)</i>			732	457,000	302,000	0	2,391	Est. 33%

Source: ITE Trip Generation Handbook, March 2001 for data from Florida and Virginia.

As shown in Table 1, the combined project (Meadowood, Campus Park, Campus Park West, and Palomar College) matches well with Galleria Area, Boca Del Mar, and

Brandermill projects, because each of these multi-use communities have a relatively higher number of residential units and a larger amount of office/commercial. These three sites have internal capture rates of 38%, 33%, and 51%, respectively. Overall, the Meadowood, Campus Park, Campus Park West, and Palomar College projects fit well within the type and mix of the ITE surveyed locations that have an average internal capture rate of 38%.

Comment #2: The letter should further elaborate on why the proposed 33% internal capture rate would be reasonable for the Fallbrook development projects. The ITE internal capture rate ranges from 28% to 51%.

Response #2: Simple internal capture rates were calculated for two San Diego area communities: Fallbrook and Tierrasanta. These two communities were chosen due to: 1) a limited number of ingress/egress roadways serving the community, 2) a mix of retail, commercial, schools, and parks to support internal trips, and 3) direct access to I-15. No other communities were found to have a similar proximity to a freeway and some level of isolation such as the proposed project. For Fallbrook, counts were collected on 7 roadways creating a cordon as shown in **Attachment A**. For Tierrasanta, cordon counts were collected on 4 roadways. The actual Average Daily Trips (ADT) leaving and entering the community was taken as the sum of the cordon counts. The number of occupied households for each community was obtained from SANDAG. The cordon volumes and SANDAG data are included in **Attachment B**. The SANDAG rate of 10 daily trips per household was used to calculate the theoretical number of household ADT per community. The difference between the cordon and theoretical ADT provides a number of ADT staying within the community. The ratio of ADT staying in the community to the theoretical ADT provided the calculated internal capture rate as shown in **Table 2**:

Table 2: San Diego Area Internal Capture Rates (Fallbrook and Tierrasanta)

Study Area and Cordon Streets	ADT based on Ground Counts (1)	SANDAG 2007 Occupied Households (2)	ADT based on 10 ADT per Household (A)	Number of ADT staying in area (B)	Simplified Internal Capture Rate (B divided by A)
<u>Fallbrook</u>					
Old 395/Mission - West of I-15	24,359				
Old 395 - North of SR-76	7,174				
Sage Rd - North of SR-76	258				
Gird Rd - North of SR-76	3,190				
Via Monserate - North of SR-76 (3)	1,600				
Mission Rd - North of SR-76	20,352				
Olive Hill Rd - South of La Tara Ln	<u>4,049</u>				
<i>Fallbrook Cordon</i>	<i>60,982</i>	<i>14,366</i>	<i>143,660</i>	<i>82,678</i>	<i>58%</i>
<u>Tierrasanta</u>					
Santo Road - South of SR-52	15,658				
Clairemont Blvd - East of I-15	18,555				
Tierrasanta Blvd - East of I-15	20,937				
Aero Dr - East of I-15	<u>13,846</u>				
<i>Tierrasanta Cordon</i>	<i>68,996</i>	<i>10,989</i>	<i>109,890</i>	<i>40,894</i>	<i>37%</i>
Average Simplified Internal Capture Rate					47.4%

Notes: (1) 24 hours collected on Wed 1/23/08. (2) SANDAG data by zip code for Tierrasanta and by census tracts for Fallbrook. (3) Via Monserate count failed, thus count was estimated at about half of Gird Road volume.

As shown in Table 2, this calculated internal capture rate for Fallbrook is 58% and 37% for Tierrasanta with an average of 47.4%. The 47% average is within the ITE range from 28% to 51%. The SANDAG internal capture rate of 33% is conservative when compared to local internal capture rates for communities that are adjacent to I-15.

Comment #3: It appears that the 33% internal capture rate is proposed for buildout of the Fallbrook development projects for the Year 2030 scenario. The letter should provide suggested internal capture rates for the following two scenarios:

Existing plus Project

Existing plus Project plus proposed/pending projects (near-term cumulative)

It is very unlikely that the internal capture rates for the two above scenarios would not be as high as what would be projected for buildout of the Fallbrook development projects for the Year 2030 scenario.

Response #3: The 33% internal capture rate is proposed for use at buildout.

Under existing plus project conditions, an internal capture rate will only be used when there is a mix of residential and commercial uses (i.e. if only residential is constructed initially, then no internal capture rate would be applied). The existing plus project internal capture rate will be based on a ratio of near-term residential to commercial uses vs. build-out residential to commercial uses. That is to say, if a project phase only had half of the commercial and all of the residential, then that phase would only incorporate an internal capture rate of about half of the buildout 33% internal capture rate.

Under existing plus project plus proposed/pending projects (near-term cumulative), the interim internal capture rate will be based on the ratio of near-term cumulative residential to commercial uses vs. build-out residential to commercial uses as described above.

Comment #4: The traffic consultant should coordinate with SANDAG staff to determine if other local multi-use developments have assumed/exhibited internal capture rates within the range proposed for the Fallbrook projects. In addition to County and Caltrans staff, SANDAG staff should provide input on the internal capture rate because the Fallbrook developments are large-scale Congestion Management Program (CMP) projects.

Response #4: SANDAG staff member Mr. Mike Calandra stated “As far as I am aware, there are no other comparable mixed-use developments in the County of San Diego that meet both internal land uses and external proximity to anything else. While there probably are comparable mixed-use developments, your Fallbrook project(s) are unique in that they are isolated: it is almost 20 miles north/south to Temecula and Escondido, and almost 10 miles east/west to Fallbrook\Oceanside and Pala\Pauma. You should not compare your project to a similar one in an urban or suburban

environment because those developments will have good accessibility literally in all directions across the street.”

SANDAG staff has provided information on the latest CMP requirements to be used in the traffic study.

Comment #5: The letter should discuss how the SANDAG traffic model determines the exchange of trips to/from the Riverside County cordon zone and the Fallbrook/North County area. The letter should discuss if the project site’s close proximity to the Riverside County cordon zone is affecting the internal capture rate result.

Response #5: SANDAG staff member Mr. Mike Calandra stated “Limeng provided you with a graphic earlier that shows the model assigning 9% of all project traffic to/from the Riverside cordon zone. The model distributes and assigns trips based on existing data and observations, including surveys of county-line crossers. The proximity of this project to nothing means that trips will match up and be assigned to zone-pairs that exceed the average trip length, but keep in mind that the average trip length frequencies are a bell curve and thus in theory have no upper limit.”

Comment #6: The letter should attempt to quantify trip reductions and the ability of trips to remain internal within large multiuse developments with information regarding non-motorized internal traffic. The letter could discuss the following:

- a. Projected Percentage of Walk Trips in Development (GIS buffered ¼-1/2 mile from homes to shops/offices/retail)
- b. Projected Percentage of Bike trips in development (GIS buffered ½-2 miles from homes to shops/offices/retail).
- c. Sidewalk access from homes to destinations.
- d. Completeness of sidewalk network, accessibility of network from homes to commercial offices.
- e. Bicycle network, accessibility, destination parking and ability to use lower speed streets, avoid high speed roads.
- f. Other internal connections/paths within developments that are not counted/documented in a traditional TAZ.

A figure is included in **Attachment C** that includes ¼, ½, and 1 mile buffers around the shops, office, and retail areas for both Campus Park and Meadowood. Based on the aforementioned buffer areas, the number of households and percentage of total households are summarized in **Table 3**.

Table 3: Households within ¼, ½, and 1 mile of shops/office/retail uses

Development	With 1/4 Mile		With 1/2 Mile		With 1 Mile	
	Units	Percentage	Units	Percentage	Units	Percentage
Campus Park (households)	728	66%	978	89%	1096	100%
Meadowood (households)	316	37%	662	77%	858	100%
Totals	1044	53%	1640	84%	1954	100%

Source: RECON GIS Analysis

As shown in Table 3, a total of about 50% and 80% of the total households are within a walking distance (¼ to ½ mile) of the shops, offices, and retail uses. Furthermore, about 100% of the households are within biking distance of 1 mile. Please note that due to the location and elongated shape of the shops, offices and retails areas, the buffering does not account for the longer distance from a household on the southern end to a commercial point on the northern end. Rather, the buffering provides an average for distances to the commercial areas. Furthermore, a large portion of the multi-family is immediately adjacent to the town center – a concentrated element within the buffering rings. Another element difficult to quantify is the exact route (sidewalks or pathways) a pedestrian may take. Therefore, the calculated percentages are used in approximate terms (i.e. 53% is better expressed as approximately 50%) with emphasis that the mass of the households are within a close distance to the shops, offices, and retail uses.

Response #6a: The percentage of walk trips in the development is a function of distance, topography, work purpose, leisure purpose, convenience, desire for exercise, and other factors. As shown in Table 3, more than half of the households will be within walking distance to the shops, office, and retail uses. Thus, walk trips will include work, school, and leisure trips.

A review of on-line resources uncovered a survey documenting the mode of transportation to work in Fallbrook that showed 3% walked to work while 1% used a bicycle (survey summary included in **Attachment D**). However, this survey is only one part of the potential walk trips. The survey does not document the percentage of school and leisure trips. Therefore, applying specific survey results may not accurately relay the true potential of walk trips because so many households are located ¼ to ½ mile of shops, offices, and retail uses. What is most important here is that this community is configured to allow household members to ability to reach multiple amenities by simply walking.

Response #6b: The percentage of bike trips could potentially be very high with all of the households located with 1 mile of the shops, offices, and retail uses.

Response #6c: Either sidewalks or pathway will be provided from the residential areas to the shops, office, and retail areas.

Response #6d: In addition to sidewalks and pathways, the community will have trails to further provide a network for accessibility from homes to the shops, office, and retail

areas. Meadowood is proposed with approximately 4.2 miles of trails. Exhibits showing the proposed trails for Campus Park and Meadowood are shown in **Attachment E**.

Response #6e: Bicycle accessibility is possible for a majority of the community through multiple routes to the shops, office, and retail areas. Bicycle parking will be provided at commercial areas as required by code.

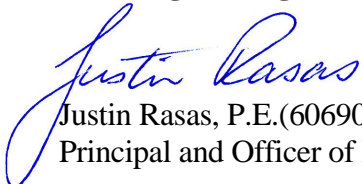
Response #6f: It is correct that traditional TAZs do not include details such as internal connections or paths within developments. If a traffic model was constructed with smaller TAZs and more centroid connectors representing additional connections/paths, the internal capture rate could be higher as the gravity model would have the potential to assign more trips to near-by zones. Thus, the SANDAG Series 11 traffic model with fewer TAZs and fewer centroid connectors may have underestimated the internal capture rate.

In summary, the SANDAG Series 11 internal capture rate of 33% is very reasonable if not under estimated given that:

- 1) ITE sources with similar land uses documented internal capture rates from 28% to 51% with an average of 38%,
- 2) Local internal capture rates have been calculated for Fallbrook at 58% and 37% for Tierrasanta,
- 3) SANDAG staff have indicated no other similar projects have been modeled that are unique in being isolated with a complementary mix of land uses, and
- 4) A GIS analysis documented about 50% of the households are within a walking distance of ¼ mile to the commercial uses while approximately 80% of the households are with ½ mile of the commercial uses, and 100% of the households are within 1 mile of the commercial uses – making this a walkable project.

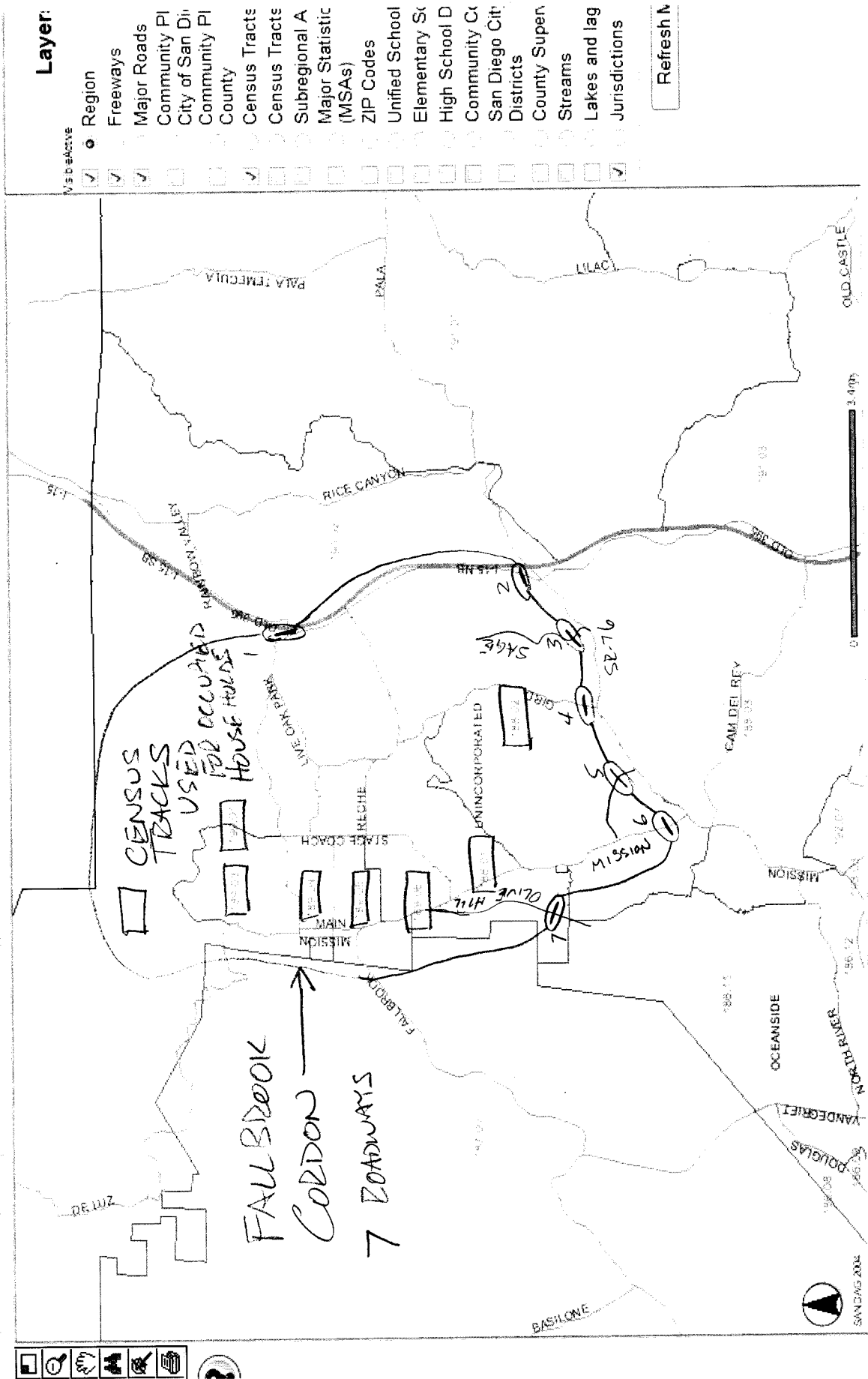
Please call me at (619) 890-1253 if you have any questions.

Sincerely,
LOS Engineering, Inc.


Justin Rasas, P.E.(60690), PTOE
Principal and Officer of LOS Engineering, Inc.

ATTACHMENT A

FALLBROOK CORDON MAP



ATTACHMENT B

CORDON VOLUMES AND SANDAG OCCUPIED HOUSEHOLD DATA

Daily Vehicle Volume Report

Location:

Old 395 between Mission Road and I-15 SB Ramps

File Number: 82401

Counter ID: AB201/AB202

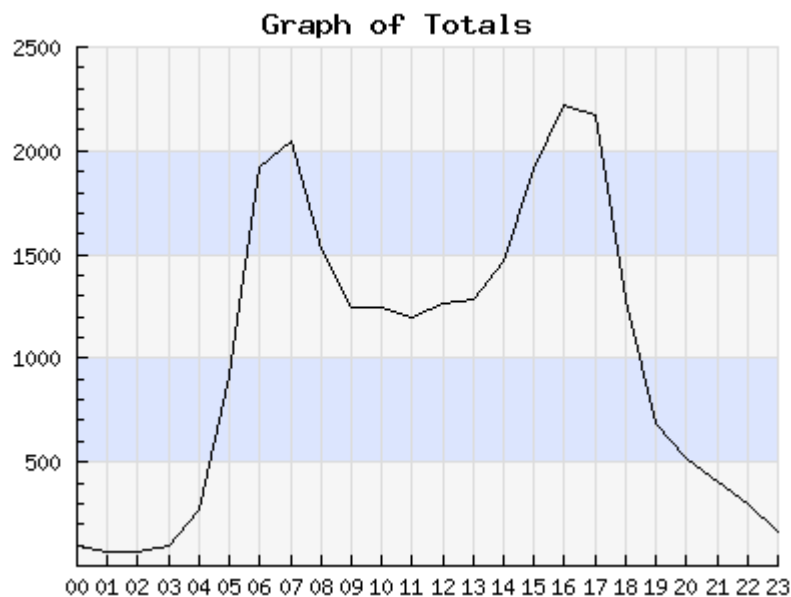
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	West Bound Volume	East Bound Volume	Total Volume
00:00 - 00:59	60	38	98
01:00 - 01:59	39	26	65
02:00 - 02:59	29	34	63
03:00 - 03:59	46	51	97
04:00 - 04:59	138	128	266
05:00 - 05:59	588	332	920
06:00 - 06:59	1215	705	1920
07:00 - 07:59	1177	866	2043
08:00 - 08:59	718	804	1522
09:00 - 09:59	555	694	1249
10:00 - 10:59	537	704	1241
11:00 - 11:59	522	678	1200
12:00 - 12:59	623	645	1268
13:00 - 13:59	657	626	1283
14:00 - 14:59	678	787	1465
15:00 - 15:59	882	1034	1916
16:00 - 16:59	910	1314	2224
17:00 - 17:59	770	1405	2175
18:00 - 18:59	568	715	1283
19:00 - 19:59	323	359	682
20:00 - 20:59	288	230	518
21:00 - 21:59	219	183	402
22:00 - 22:59	170	126	296
23:00 - 23:59	93	70	163
Total	11805	12554	24359
AM Peak Hour	6:15 7:14 Volume	7:15 8:14 934	6:45 7:44 2052
PM Peak Hour	15:45 16:44 Volume	16:45 17:44 1435	16:15 17:14 2256

Report Generated by "Turning Point Traffic Service" all rights reserved

Daily Vehicle Volume Report

Location:

Old 395 just north of SR-76

File Number: 82402

Counter ID: AB208

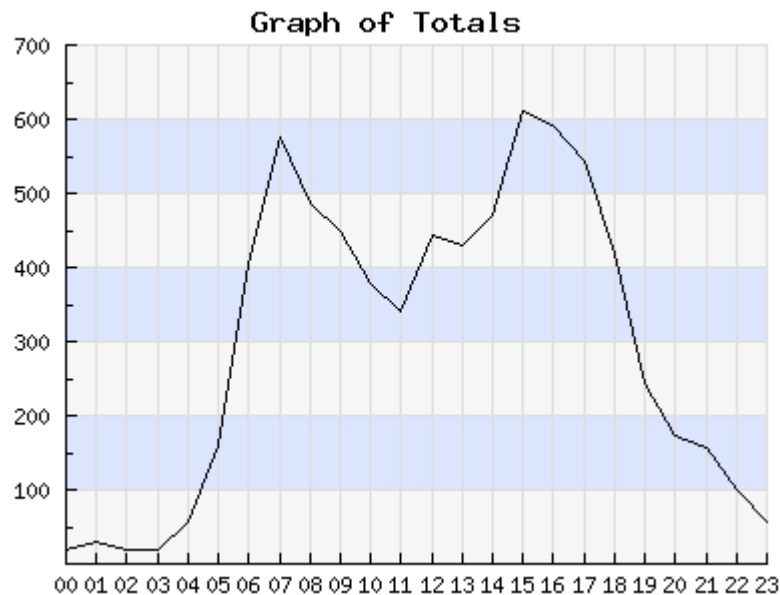
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	15	3	18
01:00 - 01:59	16	13	29
02:00 - 02:59	8	11	19
03:00 - 03:59	2	16	18
04:00 - 04:59	15	41	56
05:00 - 05:59	25	135	160
06:00 - 06:59	110	294	404
07:00 - 07:59	203	374	577
08:00 - 08:59	185	301	486
09:00 - 09:59	184	265	449
10:00 - 10:59	150	229	379
11:00 - 11:59	154	187	341
12:00 - 12:59	210	233	443
13:00 - 13:59	233	197	430
14:00 - 14:59	250	221	471
15:00 - 15:59	338	273	611
16:00 - 16:59	381	211	592
17:00 - 17:59	350	193	543
18:00 - 18:59	277	142	419
19:00 - 19:59	150	92	242
20:00 - 20:59	124	49	173
21:00 - 21:59	86	72	158
22:00 - 22:59	65	35	100
23:00 - 23:59	38	18	56
Total	3569	3605	7174
AM Peak	8:45	7:00	7:00
Hour	9:44	7:59	7:59
Volume	204	374	577
PM Peak	15:45	15:00	15:45
Hour	16:44	15:59	16:44
Volume	406	273	644

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Daily Vehicle Volume Report

Location:

Sage Road just north of SR-76

File Number: 82403

Counter ID: SP101

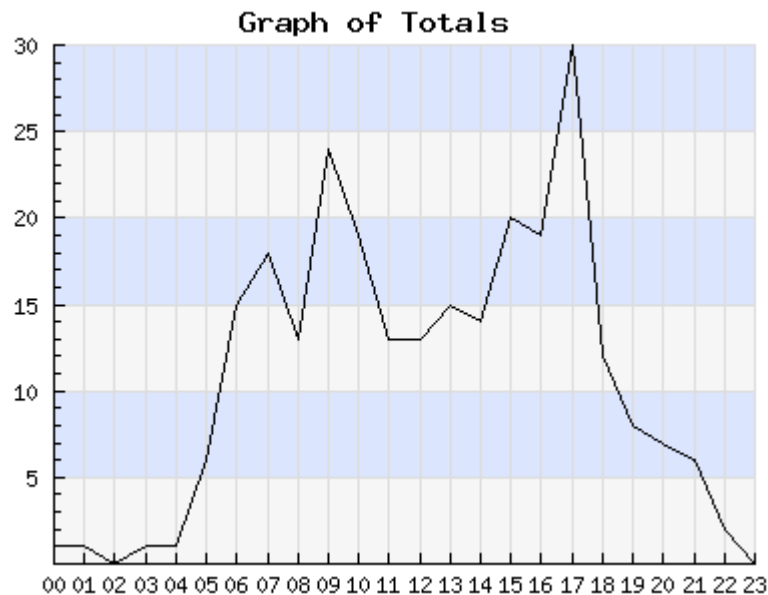
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	South Bound Volume	North Bound Volume	Total Volume
00:00 - 00:59	0	1	1
01:00 - 01:59	0	1	1
02:00 - 02:59	0	0	0
03:00 - 03:59	0	1	1
04:00 - 04:59	1	0	1
05:00 - 05:59	3	3	6
06:00 - 06:59	6	9	15
07:00 - 07:59	12	6	18
08:00 - 08:59	7	6	13
09:00 - 09:59	11	13	24
10:00 - 10:59	11	8	19
11:00 - 11:59	9	4	13
12:00 - 12:59	8	5	13
13:00 - 13:59	8	7	15
14:00 - 14:59	6	8	14
15:00 - 15:59	10	10	20
16:00 - 16:59	4	15	19
17:00 - 17:59	14	16	30
18:00 - 18:59	8	4	12
19:00 - 19:59	2	6	8
20:00 - 20:59	2	5	7
21:00 - 21:59	1	5	6
22:00 - 22:59	1	1	2
23:00 - 23:59	0	0	0
Total	124	134	258
AM Peak Hour	6:45 7:44	9:15 10:14	9:15 10:14
Volume	14	16	26
PM Peak Hour	17:00 17:59	15:30 16:29	17:00 17:59
Volume	14	18	30

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Daily Vehicle Volume Report

Location:

Gird Road just north of SR-76

File Number: 82404

Counter ID: AB209

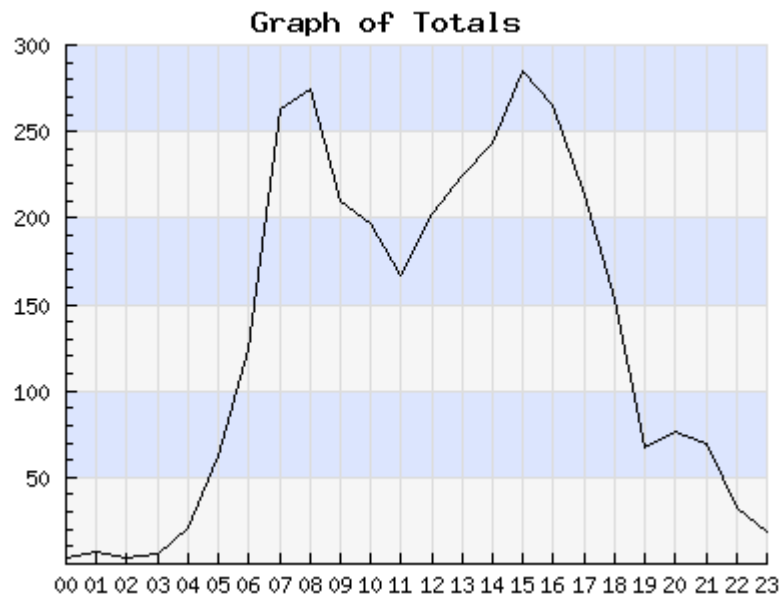
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	South Bound Volume	North Bound Volume	Total Volume
00:00 - 00:59	1	2	3
01:00 - 01:59	3	4	7
02:00 - 02:59	3	1	4
03:00 - 03:59	4	2	6
04:00 - 04:59	18	3	21
05:00 - 05:59	54	8	62
06:00 - 06:59	93	31	124
07:00 - 07:59	140	123	263
08:00 - 08:59	160	115	275
09:00 - 09:59	124	86	210
10:00 - 10:59	103	94	197
11:00 - 11:59	88	79	167
12:00 - 12:59	85	118	203
13:00 - 13:59	93	132	225
14:00 - 14:59	108	135	243
15:00 - 15:59	124	161	285
16:00 - 16:59	89	176	265
17:00 - 17:59	65	148	213
18:00 - 18:59	26	127	153
19:00 - 19:59	8	59	67
20:00 - 20:59	23	54	77
21:00 - 21:59	10	59	69
22:00 - 22:59	1	31	32
23:00 - 23:59	2	17	19
Total	1425	1765	3190
AM Peak Hour	8:00 - 8:59	7:15 - 8:14	7:30 - 8:29
Volume	160	141	298
PM Peak Hour	14:30 - 15:29	15:30 - 16:29	15:00 - 15:59
Volume	132	177	285

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Daily Vehicle Volume Report

Location:

Mission Road just north of SR-76

File Number: 82405

Counter ID: AB210/AB211

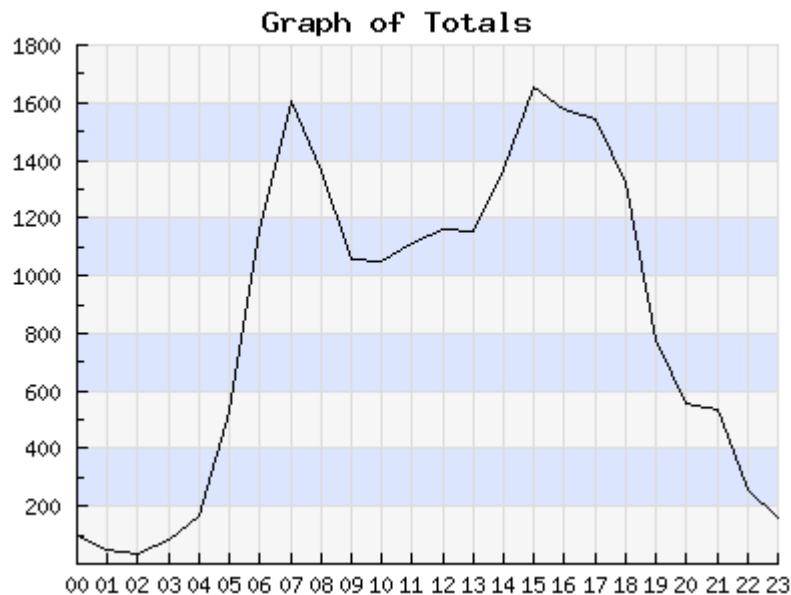
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	79	15	94
01:00 - 01:59	33	18	51
02:00 - 02:59	24	10	34
03:00 - 03:59	33	48	81
04:00 - 04:59	30	140	170
05:00 - 05:59	94	433	527
06:00 - 06:59	381	773	1154
07:00 - 07:59	737	865	1602
08:00 - 08:59	601	761	1362
09:00 - 09:59	501	554	1055
10:00 - 10:59	528	518	1046
11:00 - 11:59	585	524	1109
12:00 - 12:59	624	535	1159
13:00 - 13:59	678	475	1153
14:00 - 14:59	835	537	1372
15:00 - 15:59	995	661	1656
16:00 - 16:59	1001	575	1576
17:00 - 17:59	1002	540	1542
18:00 - 18:59	944	375	1319
19:00 - 19:59	509	272	781
20:00 - 20:59	363	193	556
21:00 - 21:59	371	167	538
22:00 - 22:59	189	65	254
23:00 - 23:59	129	32	161
Total	11266	9086	20352
AM Peak Hour	6:45	6:45	6:45
Hour	7:44	7:44	7:44
Volume	754	870	1624
PM Peak Hour	16:15	14:45	15:00
Hour	17:14	15:44	15:59
Volume	1053	661	1656

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Daily Vehicle Volume Report

Location:

Olive Hill Rd just south of La Tara Lane

File Number: 82406

Counter ID: SP108

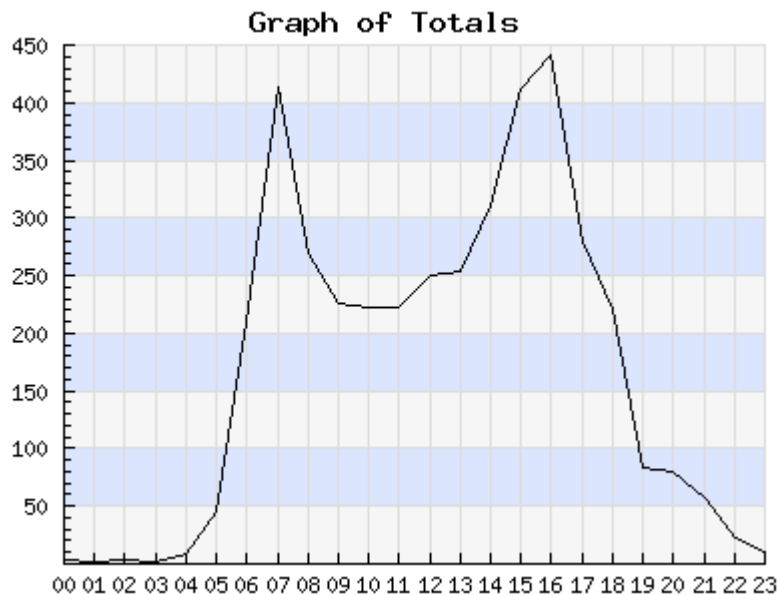
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	1	2	3
01:00 - 01:59	1	0	1
02:00 - 02:59	2	2	4
03:00 - 03:59	0	2	2
04:00 - 04:59	4	4	8
05:00 - 05:59	26	19	45
06:00 - 06:59	74	136	210
07:00 - 07:59	206	207	413
08:00 - 08:59	127	143	270
09:00 - 09:59	108	118	226
10:00 - 10:59	124	99	223
11:00 - 11:59	126	96	222
12:00 - 12:59	130	120	250
13:00 - 13:59	138	116	254
14:00 - 14:59	158	153	311
15:00 - 15:59	202	209	411
16:00 - 16:59	267	175	442
17:00 - 17:59	150	130	280
18:00 - 18:59	124	97	221
19:00 - 19:59	36	47	83
20:00 - 20:59	25	55	80
21:00 - 21:59	23	35	58
22:00 - 22:59	9	13	22
23:00 - 23:59	3	7	10
Total	2064	1985	4049
AM Peak Hour	7:00 - 7:59	6:45 - 7:44	6:45 - 7:44
Volume	206	235	432
PM Peak Hour	16:00 - 16:59	15:00 - 15:59	16:00 - 16:59
Volume	267	209	442

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Daily Vehicle Volume Report

Location:

Santo Road between SR-52 and Portobelo Dr

File Number: 82501

Counter ID: SP106/SP107

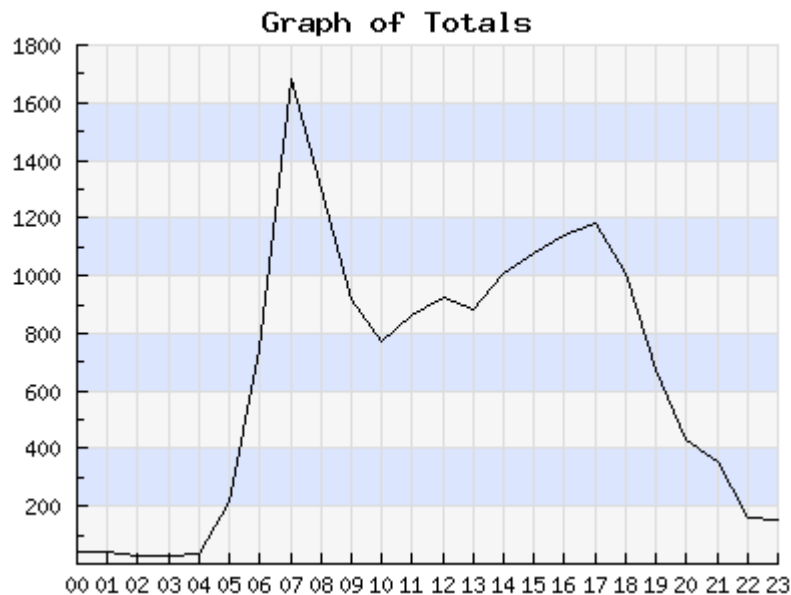
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	North Bound Volume	South Bound Volume	Total Volume
00:00 - 00:59	15	28	43
01:00 - 01:59	14	28	42
02:00 - 02:59	8	20	28
03:00 - 03:59	12	13	25
04:00 - 04:59	28	10	38
05:00 - 05:59	172	40	212
06:00 - 06:59	548	198	746
07:00 - 07:59	1183	496	1679
08:00 - 08:59	839	463	1302
09:00 - 09:59	557	360	917
10:00 - 10:59	432	341	773
11:00 - 11:59	418	441	859
12:00 - 12:59	464	460	924
13:00 - 13:59	440	441	881
14:00 - 14:59	481	524	1005
15:00 - 15:59	508	572	1080
16:00 - 16:59	589	551	1140
17:00 - 17:59	674	507	1181
18:00 - 18:59	433	573	1006
19:00 - 19:59	270	404	674
20:00 - 20:59	172	261	433
21:00 - 21:59	148	209	357
22:00 - 22:59	59	103	162
23:00 - 23:59	54	97	151
Total	8518	7140	15658
AM Peak Hour	7:00 - 7:59	7:15 - 8:14	7:15 - 8:14
Volume	1183	538	1707
PM Peak Hour	16:45 - 17:44	17:45 - 18:44	16:45 - 17:44
Volume	688	583	1194

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Daily Vehicle Volume Report

Location:

Clairemont Blvd just east of I-15

File Number: 82502

Counter ID: SP104

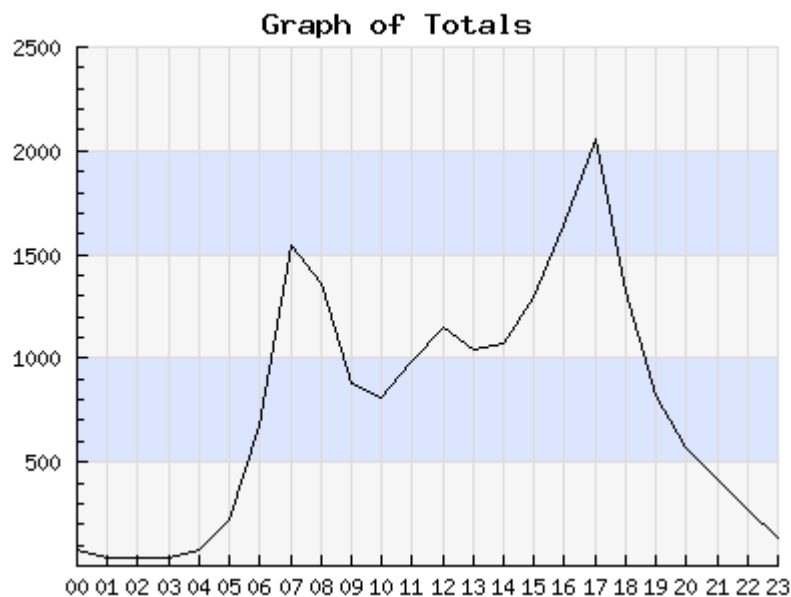
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	53	26	79
01:00 - 01:59	26	13	39
02:00 - 02:59	23	15	38
03:00 - 03:59	16	19	35
04:00 - 04:59	18	61	79
05:00 - 05:59	42	183	225
06:00 - 06:59	175	496	671
07:00 - 07:59	451	1093	1544
08:00 - 08:59	387	977	1364
09:00 - 09:59	341	542	883
10:00 - 10:59	354	460	814
11:00 - 11:59	461	519	980
12:00 - 12:59	579	573	1152
13:00 - 13:59	516	530	1046
14:00 - 14:59	563	511	1074
15:00 - 15:59	793	497	1290
16:00 - 16:59	1167	475	1642
17:00 - 17:59	1556	503	2059
18:00 - 18:59	884	435	1319
19:00 - 19:59	558	265	823
20:00 - 20:59	390	184	574
21:00 - 21:59	270	149	419
22:00 - 22:59	180	91	271
23:00 - 23:59	93	42	135
Total	9896	8659	18555
AM Peak Hour	11:00 - 11:59	7:30 - 8:29	7:15 - 8:14
Volume	461	1152	1599
PM Peak Hour	17:00 - 17:59	12:30 - 13:29	17:00 - 17:59
Volume	1556	612	2059

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Daily Vehicle Volume Report

Location:

Tierrasanta Blvd just east of I-15

File Number: 82503

Counter ID: SP105

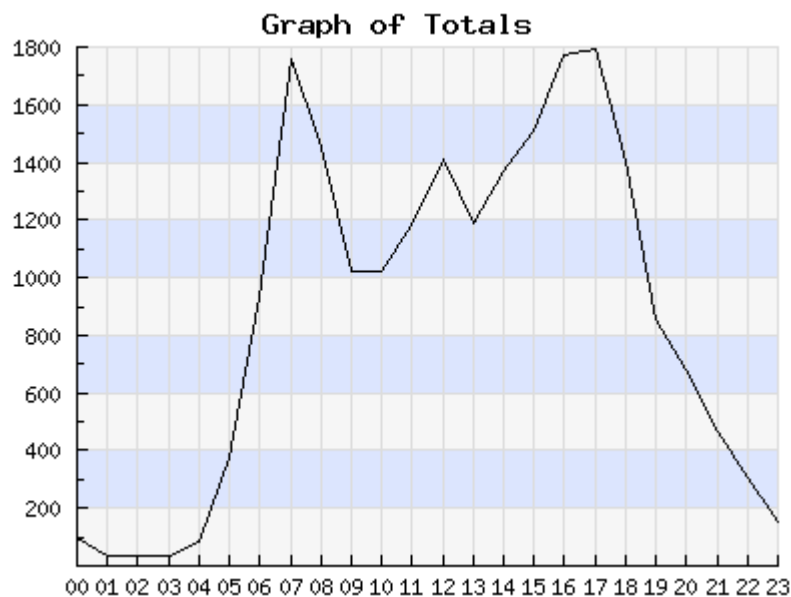
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.



Time	East Bound Volume	West Bound Volume	Total Volume
00:00 - 00:59	66	31	97
01:00 - 01:59	22	13	35
02:00 - 02:59	18	14	32
03:00 - 03:59	15	23	38
04:00 - 04:59	24	61	85
05:00 - 05:59	63	314	377
06:00 - 06:59	253	675	928
07:00 - 07:59	481	1274	1755
08:00 - 08:59	421	1032	1453
09:00 - 09:59	399	620	1019
10:00 - 10:59	485	537	1022
11:00 - 11:59	598	583	1181
12:00 - 12:59	726	686	1412
13:00 - 13:59	595	595	1190
14:00 - 14:59	748	624	1372
15:00 - 15:59	877	633	1510
16:00 - 16:59	1131	644	1775
17:00 - 17:59	1171	623	1794
18:00 - 18:59	836	567	1403
19:00 - 19:59	558	298	856
20:00 - 20:59	437	241	678
21:00 - 21:59	295	172	467
22:00 - 22:59	186	118	304
23:00 - 23:59	100	54	154
Total	10505	10432	20937
AM Peak Hour	11:00 - 11:59	7:00 - 7:59	7:00 - 7:59
Volume	598	1274	1755
PM Peak Hour	16:30 - 17:29	12:15 - 13:14	16:30 - 17:29
Volume	1227	717	1917

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Daily Vehicle Volume Report

Location:

Aero Dr just east of I-15

File Number: 82504

Counter ID: SP111/SP112

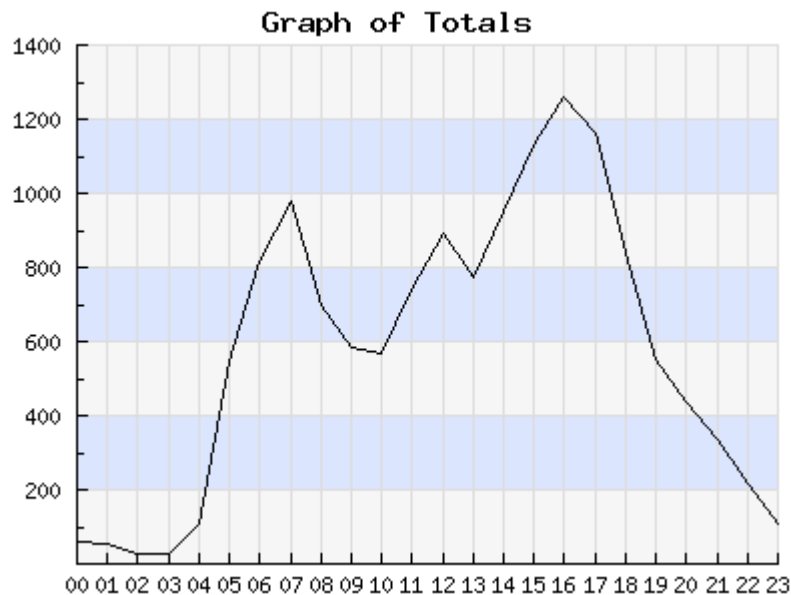
Report Duration:

Wednesday Jan 23, 2008 - 00:00 to

Wednesday Jan 23, 2008 - 23:59

Other Notes:

None at this time.

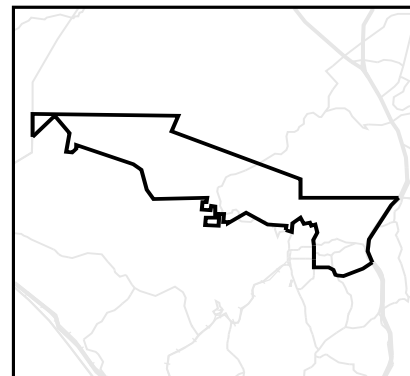


Time	West Bound Volume	East Bound Volume	Total Volume
00:00 - 00:59	13	44	57
01:00 - 01:59	14	39	53
02:00 - 02:59	9	17	26
03:00 - 03:59	18	7	25
04:00 - 04:59	90	16	106
05:00 - 05:59	486	61	547
06:00 - 06:59	604	210	814
07:00 - 07:59	588	388	976
08:00 - 08:59	353	345	698
09:00 - 09:59	281	302	583
10:00 - 10:59	292	276	568
11:00 - 11:59	341	398	739
12:00 - 12:59	403	488	891
13:00 - 13:59	294	481	775
14:00 - 14:59	429	520	949
15:00 - 15:59	433	698	1131
16:00 - 16:59	472	785	1257
17:00 - 17:59	518	644	1162
18:00 - 18:59	339	501	840
19:00 - 19:59	199	352	551
20:00 - 20:59	168	270	438
21:00 - 21:59	107	226	333
22:00 - 22:59	91	126	217
23:00 - 23:59	39	71	110
Total	6581	7265	13846
AM Peak	6:15	11:00	7:00
Hour	7:14	11:59	7:59
Volume	617	398	976
PM Peak	16:45	15:30	15:45
Hour	17:44	16:29	16:44
Volume	518	801	1278

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POPULATION AND HOUSING ESTIMATES

Census Tract 190.01



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	5,235	5,672	437	8.3%
Household Population	5,215	5,642	427	8.2%
Group Quarters Population	20	30	10	50.0%
Total Housing Units	2,060	2,257	197	9.6%
Single Family - Detached	--	1,939	--	--
Single Family - Multiple-Unit	--	19	--	--
Multi-Family	--	194	--	--
Mobile Home and Other	--	105	--	--
Occupied Housing Units	1,931	2,107	176	9.1%
Single Family - Detached	--	1,856	--	--
Single Family - Multiple-Unit	--	16	--	--
Multi-Family	--	139	--	--
Mobile Home and Other	--	96	--	--
Vacancy Rate	6.3%	6.6%	0.3%	4.8%
Persons per Household	2.70	2.68	-0.02	-0.7%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	121	104	-17	-14.0%
\$15,000-\$29,999	261	243	-18	-6.9%
\$30,000-\$44,999	299	304	5	1.7%
\$45,000-\$59,999	305	303	-2	-0.7%
\$60,000-\$74,999	263	265	2	0.8%
\$75,000-\$99,999	228	333	105	46.1%
\$100,000-\$124,999	168	221	53	31.5%
\$125,000-\$149,999	115	136	21	18.3%
\$150,000-\$199,999	65	129	64	98.5%
\$200,000 or more	106	69	-37	-34.9%
Total Households	1,931	2,107	176	9.1%
Median Household Income				
Adjusted for inflation (1999 \$)	\$58,992	\$65,632	6,640	11.3%
Not adjusted for inflation (current \$)	\$58,992	\$86,636	27,644	46.9%

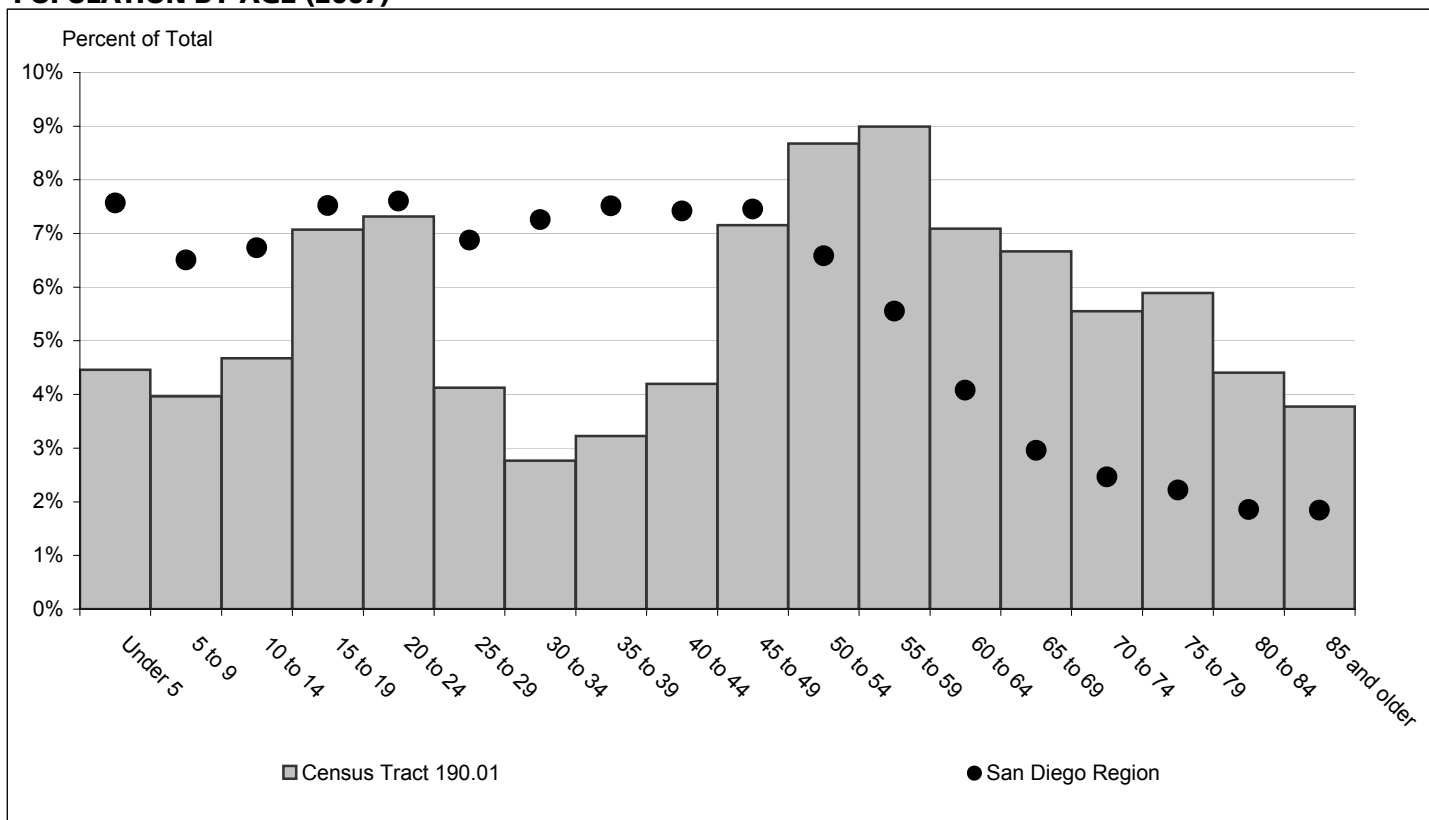
ADVISORY:

Caution should be taken when using data for small population groups, particularly at small levels of geography. Some 2000 Census data may not match information published by the U.S. Census Bureau for the following reasons: sample census data have been controlled to match 100 percent count (Summary File 1) data; and some minor adjustments were made (such as correcting the location of housing units that were erroneously allocated by the Census Bureau to roads and open space) to more accurately reflect the region's true population and housing distribution.

POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	5,672	2,834	2,838	50%
Under 5	253	122	131	52%
5 to 9	225	103	122	54%
10 to 14	265	146	119	45%
15 to 17	246	128	118	48%
18 and 19	155	84	71	46%
20 to 24	415	208	207	50%
25 to 29	234	123	111	47%
30 to 34	157	80	77	49%
35 to 39	183	92	91	50%
40 to 44	238	111	127	53%
45 to 49	406	186	220	54%
50 to 54	492	257	235	48%
55 to 59	510	244	266	52%
60 and 61	159	67	92	58%
62 to 64	243	119	124	51%
65 to 69	378	185	193	51%
70 to 74	315	168	147	47%
75 to 79	334	175	159	48%
80 to 84	250	130	120	48%
85 and older	214	106	108	50%
Under 18	989	499	490	50%
65 and older	1,491	764	727	49%
Median age	50.6	50.7	50.5	-

POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	1,141	4,279	7	14	101	130
Under 5	102	140	0	1	4	6
5 to 9	60	158	0	0	2	5
10 to 14	97	157	0	0	6	5
15 to 17	62	179	1	0	1	3
18 and 19	34	116	0	0	2	3
20 to 24	99	305	2	0	3	6
25 to 29	77	147	0	0	3	7
30 to 34	62	84	0	1	2	8
35 to 39	80	97	0	1	1	4
40 to 44	60	173	1	0	1	3
45 to 49	75	307	1	0	13	10
50 to 54	90	385	0	0	5	12
55 to 59	72	417	0	0	14	7
60 and 61	23	128	0	1	3	4
62 to 64	35	191	0	1	8	8
65 to 69	27	334	0	2	8	7
70 to 74	10	291	0	1	5	8
75 to 79	29	289	1	2	8	5
80 to 84	17	218	0	4	5	6
85 and older	30	163	1	0	7	13
Under 18	321	634	1	1	13	19
65 and older	113	1,295	2	9	33	39
Median age	33.2	53.6	42.5	70.0	57.7	52.1

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

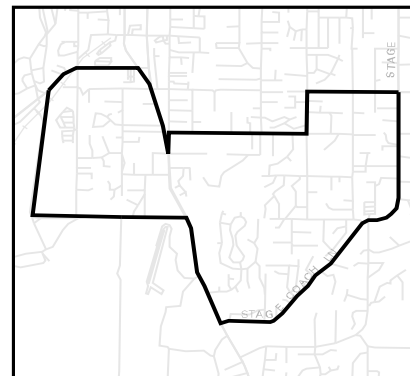
Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 189.06



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	5,759	6,658	899	15.6%
Household Population	5,728	6,617	889	15.5%
Group Quarters Population	31	41	10	32.3%
Total Housing Units	1,839	2,151	312	17.0%
Single Family - Detached	--	1,043	--	--
Single Family - Multiple-Unit	--	33	--	--
Multi-Family	--	802	--	--
Mobile Home and Other	--	273	--	--
Occupied Housing Units	1,791	2,054	263	14.7%
Single Family - Detached	--	1,011	--	--
Single Family - Multiple-Unit	--	30	--	--
Multi-Family	--	745	--	--
Mobile Home and Other	--	268	--	--
Vacancy Rate	2.6%	4.5%	1.9%	73.1%
Persons per Household	3.20	3.22	0.02	0.6%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	201	227	26	12.9%
\$15,000-\$29,999	512	472	-40	-7.8%
\$30,000-\$44,999	394	444	50	12.7%
\$45,000-\$59,999	232	328	96	41.4%
\$60,000-\$74,999	173	220	47	27.2%
\$75,000-\$99,999	125	200	75	60.0%
\$100,000-\$124,999	85	90	5	5.9%
\$125,000-\$149,999	36	40	4	11.1%
\$150,000-\$199,999	19	26	7	36.8%
\$200,000 or more	14	7	-7	-50.0%
Total Households	1,791	2,054	263	14.7%
Median Household Income				
Adjusted for inflation (1999 \$)	\$36,948	\$41,081	4,133	11.2%
Not adjusted for inflation (current \$)	\$36,948	\$54,228	17,280	46.8%

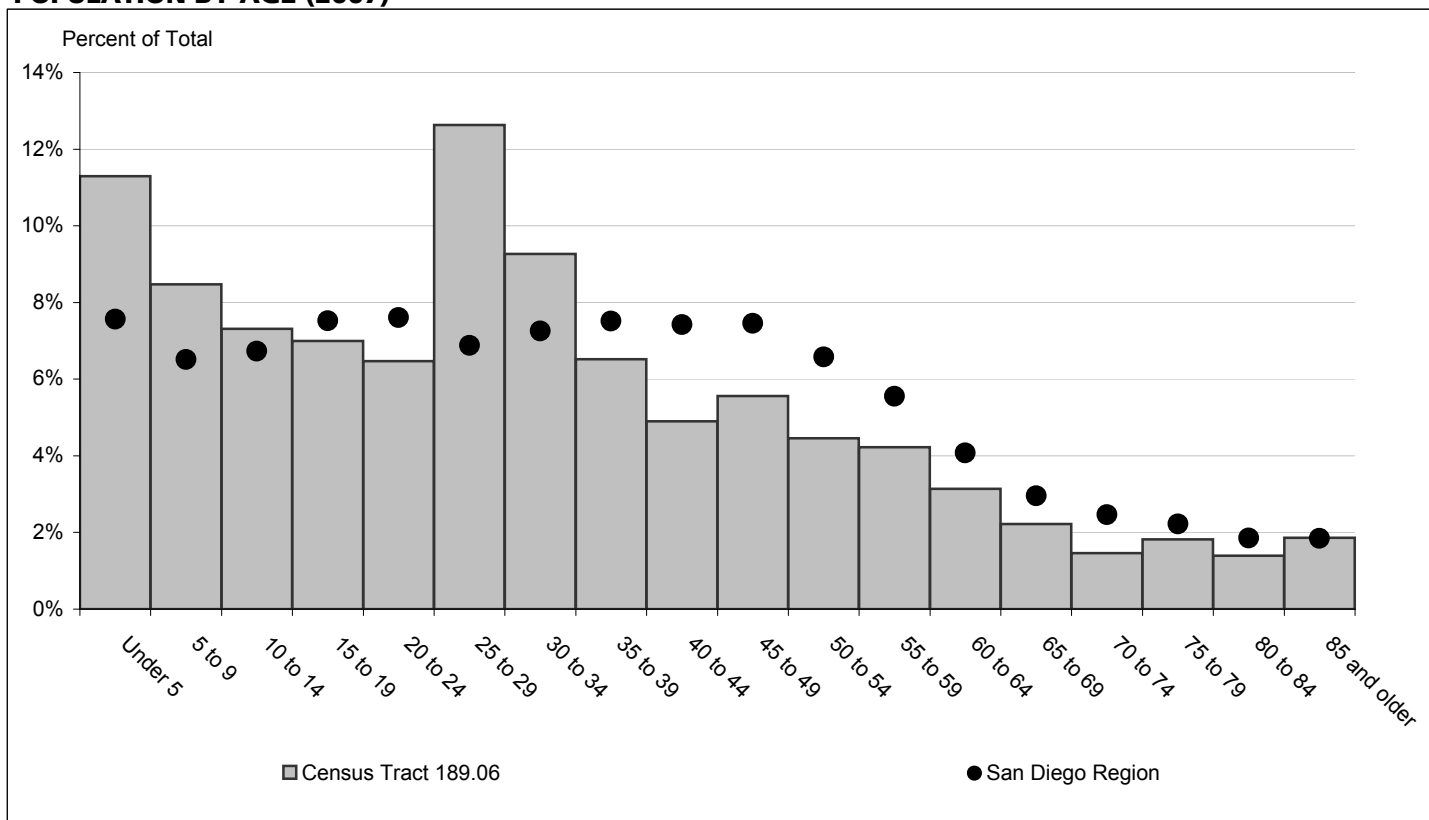
ADVISORY:

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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	6,658	3,458	3,200	48%
Under 5	752	366	386	51%
5 to 9	564	294	270	48%
10 to 14	487	280	207	43%
15 to 17	292	142	150	51%
18 and 19	174	90	84	48%
20 to 24	431	228	203	47%
25 to 29	841	472	369	44%
30 to 34	617	345	272	44%
35 to 39	434	228	206	47%
40 to 44	326	194	132	40%
45 to 49	370	192	178	48%
50 to 54	297	132	165	56%
55 to 59	281	142	139	49%
60 and 61	93	40	53	57%
62 to 64	116	51	65	56%
65 to 69	148	71	77	52%
70 to 74	97	51	46	47%
75 to 79	121	60	61	50%
80 to 84	93	31	62	67%
85 and older	124	49	75	60%
Under 18	2,095	1,082	1,013	48%
65 and older	583	262	321	55%
Median age	28.7	28.5	29.1	-

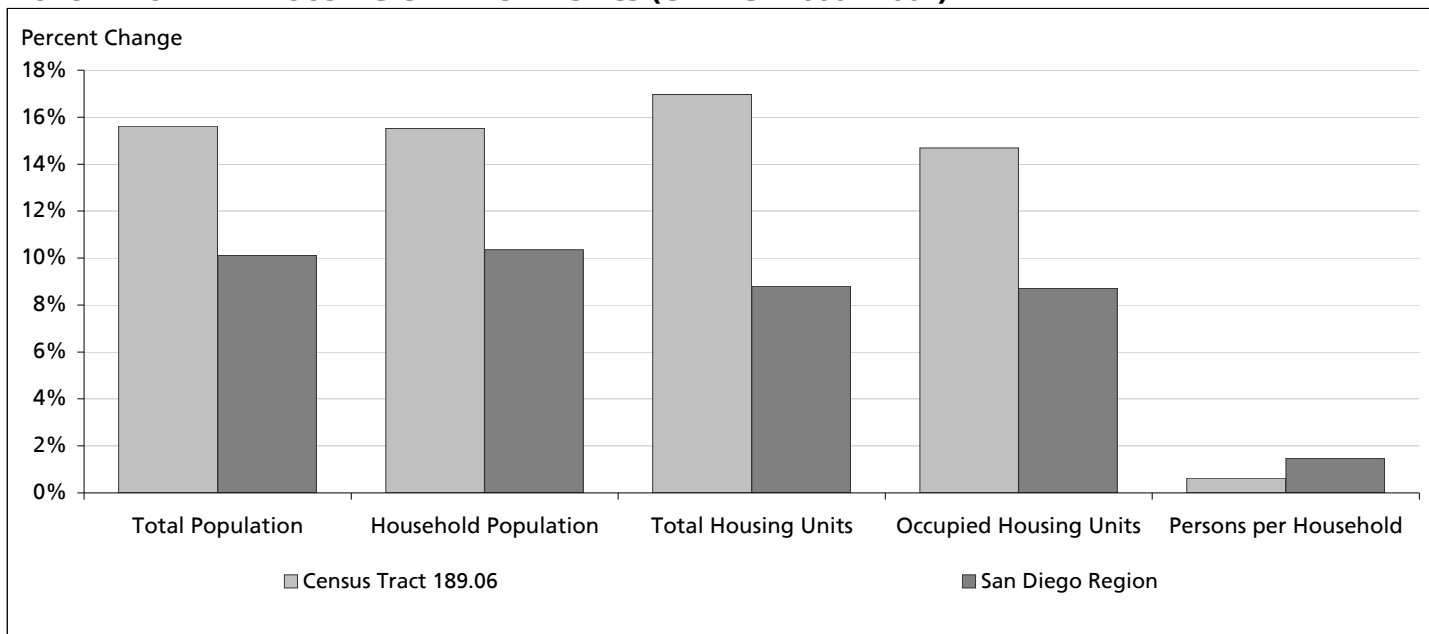
POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	3,637	2,569	177	33	124	118
Under 5	484	236	12	0	14	6
5 to 9	356	172	24	1	4	7
10 to 14	345	118	9	1	9	5
15 to 17	206	79	3	0	1	3
18 and 19	117	48	2	0	1	6
20 to 24	269	138	6	0	3	15
25 to 29	481	313	26	2	14	5
30 to 34	375	213	20	3	5	1
35 to 39	295	119	12	4	4	0
40 to 44	198	105	7	5	6	5
45 to 49	173	170	14	1	3	9
50 to 54	111	165	5	4	9	3
55 to 59	82	169	11	0	10	9
60 and 64	25	58	2	2	2	4
65 to 69	16	79	3	2	8	8
70 to 74	28	101	6	4	4	5
75 to 79	12	69	5	0	5	6
80 to 84	26	68	4	2	12	9
85 and older	17	66	3	1	2	4
Median age	21	83	3	1	8	8
Under 18	1,391	605	48	2	28	21
65 and older	104	387	21	8	31	32
Median age	25.4	34.2	31.6	47.5	46.7	48.3

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

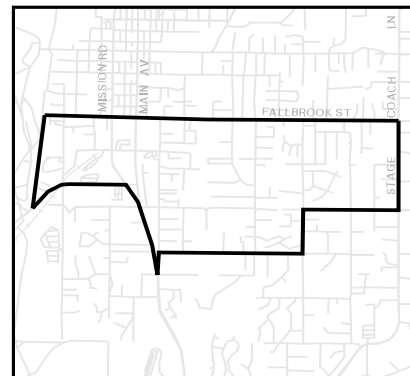
Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 189.05



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	6,425	6,975	550	8.6%
Household Population	6,414	6,919	505	7.9%
Group Quarters Population	11	56	45	409.1%
Total Housing Units	1,895	2,064	169	8.9%
Single Family - Detached	--	1,053	--	--
Single Family - Multiple-Unit	--	124	--	--
Multi-Family	--	810	--	--
Mobile Home and Other	--	77	--	--
Occupied Housing Units	1,864	2,014	150	8.0%
Single Family - Detached	--	1,046	--	--
Single Family - Multiple-Unit	--	124	--	--
Multi-Family	--	771	--	--
Mobile Home and Other	--	73	--	--
Vacancy Rate	1.6%	2.4%	0.8%	50.0%
Persons per Household	3.44	3.44	0.00	0.0%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	273	229	-44	-16.1%
\$15,000-\$29,999	462	451	-11	-2.4%
\$30,000-\$44,999	405	427	22	5.4%
\$45,000-\$59,999	288	321	33	11.5%
\$60,000-\$74,999	167	216	49	29.3%
\$75,000-\$99,999	140	203	63	45.0%
\$100,000-\$124,999	47	93	46	97.9%
\$125,000-\$149,999	32	41	9	28.1%
\$150,000-\$199,999	29	26	-3	-10.3%
\$200,000 or more	21	7	-14	-66.7%
Total Households	1,864	2,014	150	8.0%
Median Household Income				
Adjusted for inflation (1999 \$)	\$37,296	\$41,487	4,191	11.2%
Not adjusted for inflation (current \$)	\$37,296	\$54,764	17,468	46.8%

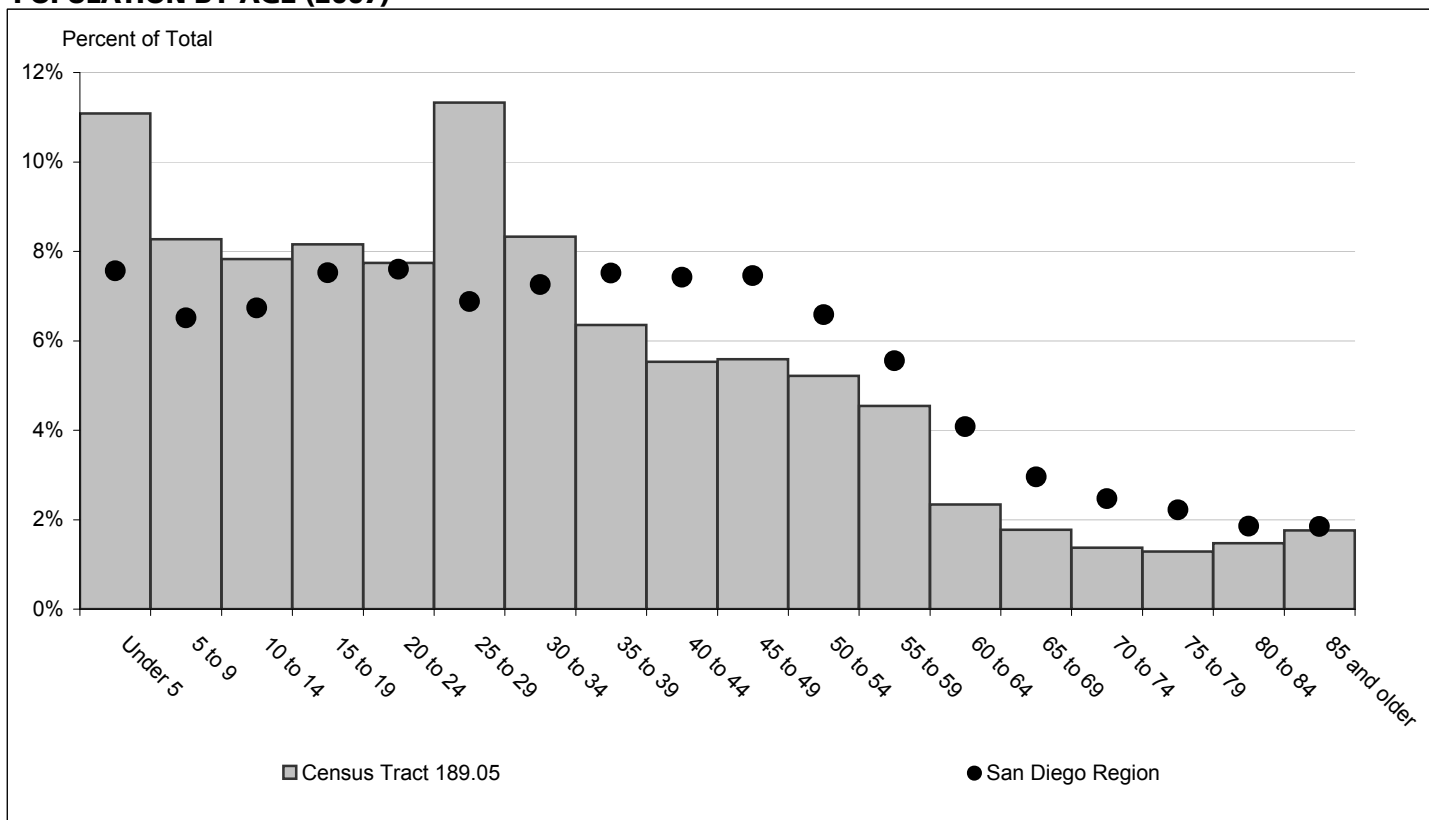
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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	6,975	3,566	3,409	49%
Under 5	773	372	401	52%
5 to 9	577	289	288	50%
10 to 14	546	288	258	47%
15 to 17	339	161	178	53%
18 and 19	230	113	117	51%
20 to 24	540	284	256	47%
25 to 29	790	430	360	46%
30 to 34	581	329	252	43%
35 to 39	443	243	200	45%
40 to 44	386	224	162	42%
45 to 49	390	186	204	52%
50 to 54	364	171	193	53%
55 to 59	317	157	160	50%
60 and 61	76	45	31	41%
62 to 64	87	47	40	46%
65 to 69	124	66	58	47%
70 to 74	96	38	58	60%
75 to 79	90	33	57	63%
80 to 84	103	35	68	66%
85 and older	123	55	68	55%
Under 18	2,235	1,110	1,125	50%
65 and older	536	227	309	58%
Median age	28.1	28.2	27.9	-

POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	3,760	2,778	172	21	116	128
Under 5	482	251	15	0	9	16
5 to 9	364	199	9	0	3	2
10 to 14	375	157	3	0	4	7
15 to 17	220	111	1	0	3	4
18 and 19	150	72	4	1	2	1
20 to 24	319	201	2	0	5	13
25 to 29	408	333	28	2	7	12
30 to 34	349	198	23	1	3	7
35 to 39	282	132	18	0	4	7
40 to 44	229	125	6	3	5	18
45 to 49	174	180	13	1	11	11
50 to 54	147	177	18	2	11	9
55 to 59	100	188	8	3	10	8
60 and 64	28	41	1	0	6	0
65 to 69	39	75	1	2	6	1
70 to 74	26	53	3	2	11	1
75 to 79	5	72	5	1	2	5
80 to 84	13	86	2	0	2	0
85 and older	9	92	8	3	8	3
Under 18	1,441	718	28	0	19	29
65 and older	92	378	19	8	29	10
Median age	24.5	31.6	35.3	55.8	50.9	36.4

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

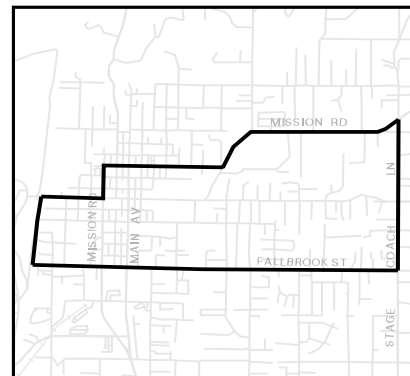
Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 189.04



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	5,715	5,783	68	1.2%
Household Population	5,525	5,553	28	0.5%
Group Quarters Population	190	230	40	21.1%
Total Housing Units	1,863	1,883	20	1.1%
Single Family - Detached	--	1,048	--	--
Single Family - Multiple-Unit	--	125	--	--
Multi-Family	--	710	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	1,824	1,837	13	0.7%
Single Family - Detached	--	1,041	--	--
Single Family - Multiple-Unit	--	125	--	--
Multi-Family	--	671	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	2.1%	2.4%	0.3%	14.3%
Persons per Household	3.03	3.02	-0.01	-0.3%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	307	297	-10	-3.3%
\$15,000-\$29,999	434	483	49	11.3%
\$30,000-\$44,999	299	290	-9	-3.0%
\$45,000-\$59,999	302	294	-8	-2.6%
\$60,000-\$74,999	204	226	22	10.8%
\$75,000-\$99,999	185	148	-37	-20.0%
\$100,000-\$124,999	48	61	13	27.1%
\$125,000-\$149,999	13	6	-7	-53.8%
\$150,000-\$199,999	20	12	-8	-40.0%
\$200,000 or more	12	20	8	66.7%
Total Households	1,824	1,837	13	0.7%
Median Household Income				
Adjusted for inflation (1999 \$)	\$38,579	\$37,164	-1,415	-3.7%
Not adjusted for inflation (current \$)	\$38,579	\$49,057	10,478	27.2%

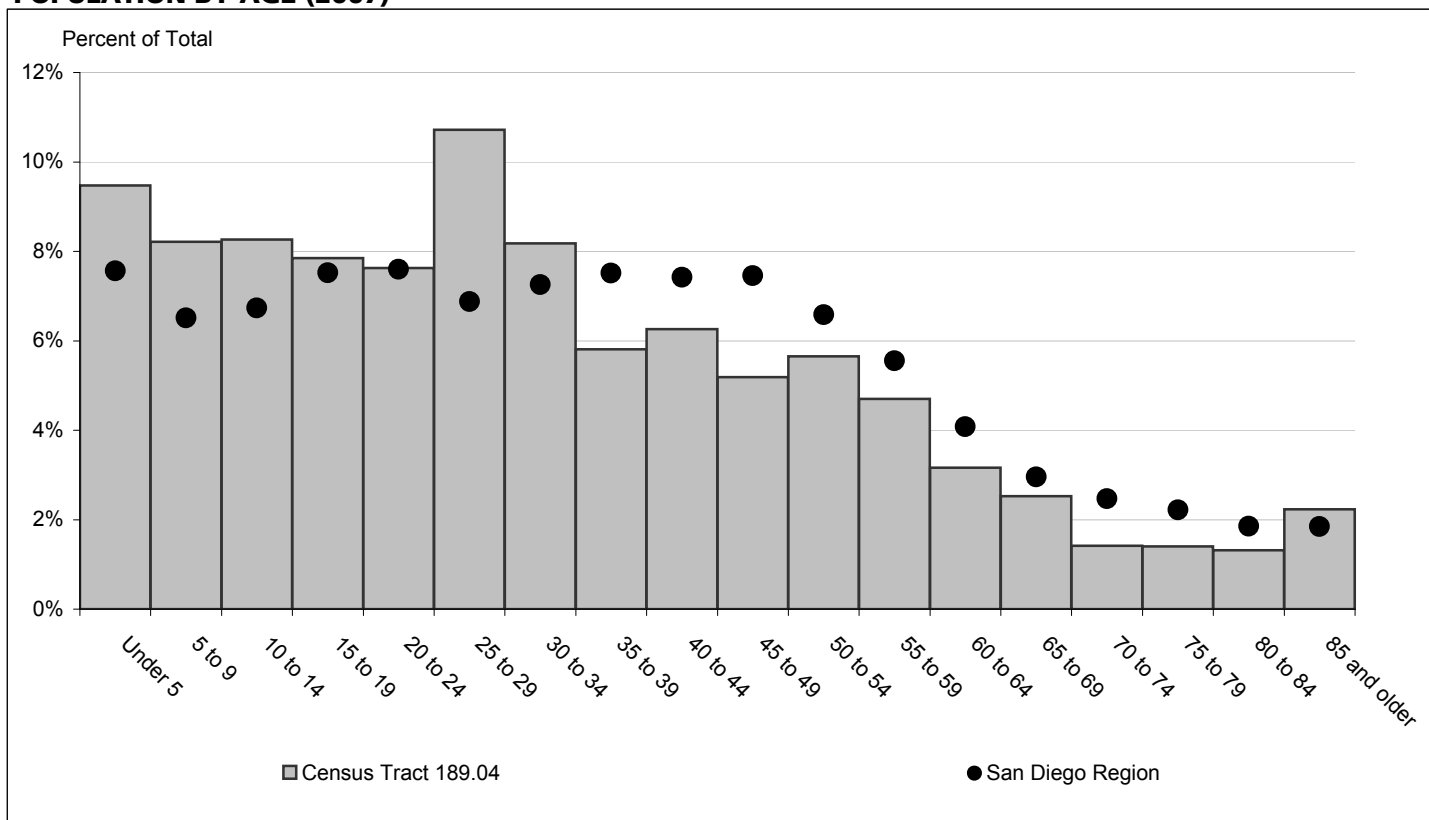
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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	5,783	2,881	2,902	50%
Under 5	548	264	284	52%
5 to 9	475	242	233	49%
10 to 14	478	226	252	53%
15 to 17	252	126	126	50%
18 and 19	202	108	94	47%
20 to 24	441	239	202	46%
25 to 29	620	346	274	44%
30 to 34	473	276	197	42%
35 to 39	336	176	160	48%
40 to 44	362	172	190	52%
45 to 49	300	152	148	49%
50 to 54	327	136	191	58%
55 to 59	272	140	132	49%
60 and 61	71	29	42	59%
62 to 64	112	43	69	62%
65 to 69	146	69	77	53%
70 to 74	82	36	46	56%
75 to 79	81	36	45	56%
80 to 84	76	24	52	68%
85 and older	129	41	88	68%
Under 18	1,753	858	895	51%
65 and older	514	206	308	60%
Median age	29.0	28.4	29.7	-

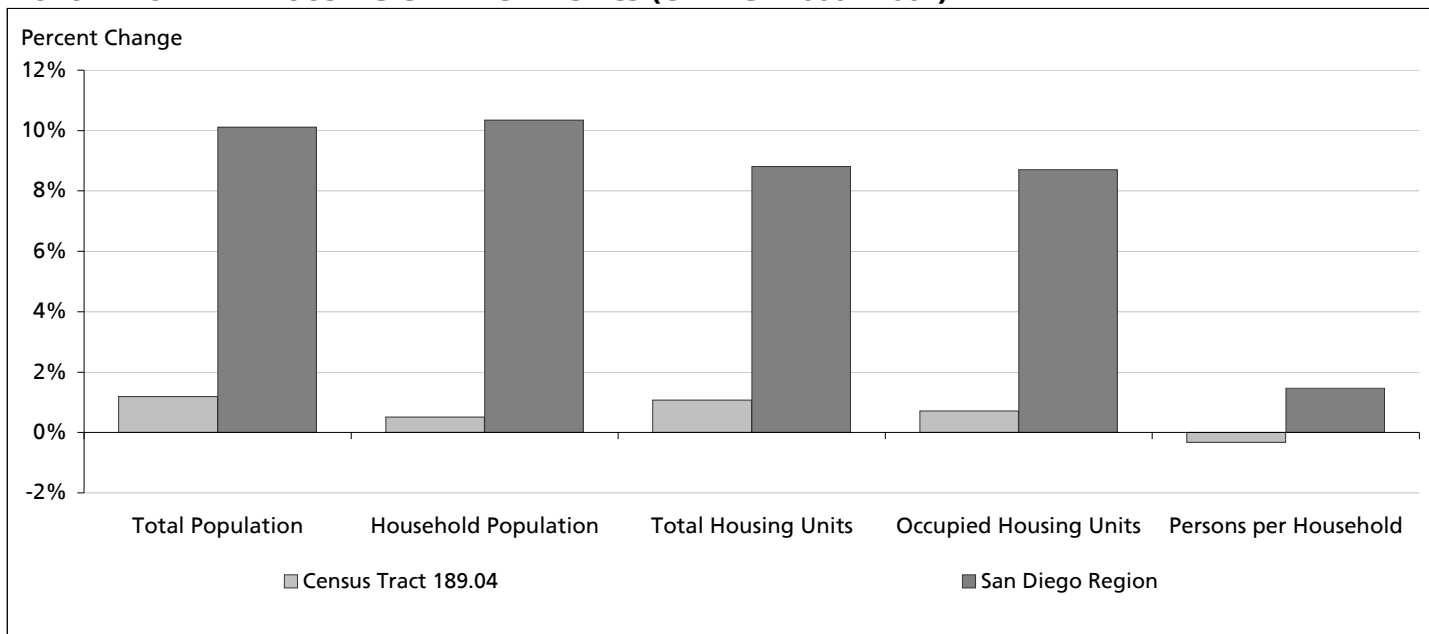
POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	2,716	2,641	123	20	110	173
Under 5	280	227	15	0	0	26
5 to 9	246	208	7	0	3	11
10 to 14	292	176	1	0	2	7
15 to 17	153	89	2	0	1	7
18 and 19	115	76	7	1	1	2
20 to 24	227	179	6	0	5	24
25 to 29	303	259	34	1	5	18
30 to 34	283	154	25	1	6	4
35 to 39	188	128	5	3	4	8
40 to 44	193	139	6	1	5	18
45 to 49	123	149	6	1	14	7
50 to 54	98	200	1	3	15	10
55 to 59	59	194	4	0	9	6
60 and 61	18	44	0	0	5	4
62 to 64	35	68	0	1	6	2
65 to 69	49	79	0	2	11	5
70 to 74	30	41	0	1	6	4
75 to 79	9	60	1	0	6	5
80 to 84	6	63	1	1	3	2
85 and older	9	108	2	4	3	3
Under 18	971	700	25	0	6	51
65 and older	103	351	4	8	29	19
Median age	25.7	33.5	28.5	53.3	53.0	27.6

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

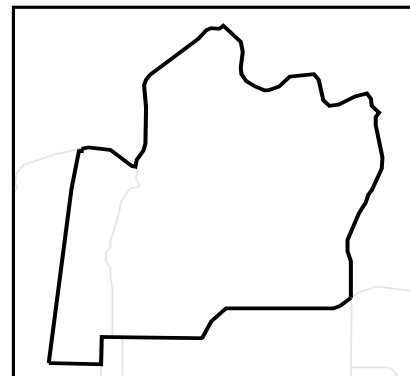
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Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 189.03



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	4,771	4,926	155	3.2%
Household Population	4,729	4,829	100	2.1%
Group Quarters Population	42	97	55	131.0%
Total Housing Units	1,668	1,704	36	2.2%
Single Family - Detached	--	1,079	--	--
Single Family - Multiple-Unit	--	92	--	--
Multi-Family	--	404	--	--
Mobile Home and Other	--	129	--	--
Occupied Housing Units	1,621	1,645	24	1.5%
Single Family - Detached	--	1,066	--	--
Single Family - Multiple-Unit	--	87	--	--
Multi-Family	--	375	--	--
Mobile Home and Other	--	117	--	--
Vacancy Rate	2.8%	3.5%	0.7%	25.0%
Persons per Household	2.92	2.94	0.02	0.7%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	257	221	-36	-14.0%
\$15,000-\$29,999	327	303	-24	-7.3%
\$30,000-\$44,999	291	277	-14	-4.8%
\$45,000-\$59,999	230	222	-8	-3.5%
\$60,000-\$74,999	142	169	27	19.0%
\$75,000-\$99,999	138	186	48	34.8%
\$100,000-\$124,999	132	111	-21	-15.9%
\$125,000-\$149,999	71	64	-7	-9.9%
\$150,000-\$199,999	10	60	50	500.0%
\$200,000 or more	23	32	9	39.1%
Total Households	1,621	1,645	24	1.5%
Median Household Income				
Adjusted for inflation (1999 \$)	\$41,675	\$46,453	4,778	11.5%
Not adjusted for inflation (current \$)	\$41,675	\$61,319	19,644	47.1%

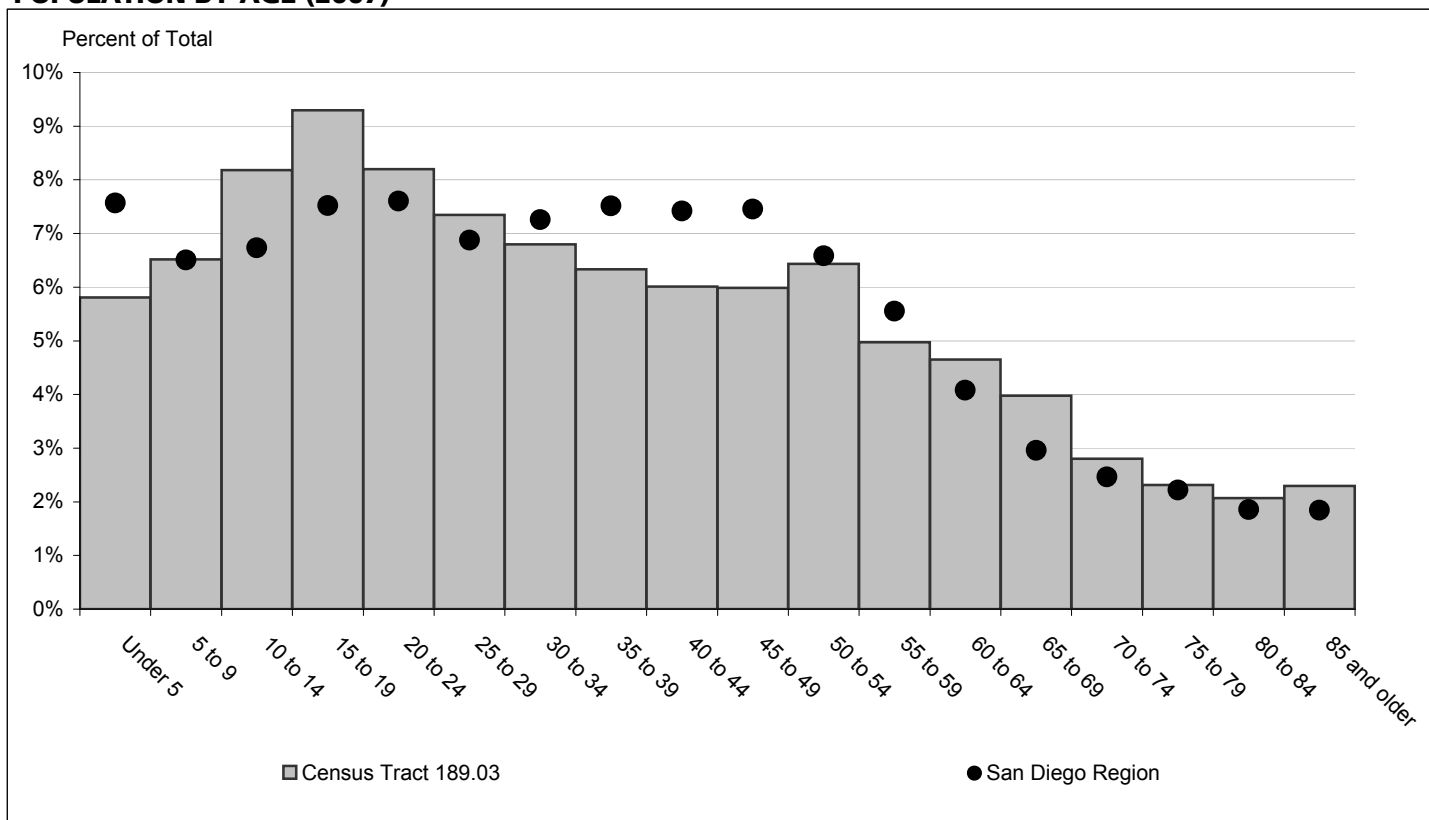
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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	4,926	2,418	2,508	51%
Under 5	286	138	148	52%
5 to 9	321	159	162	50%
10 to 14	403	212	191	47%
15 to 17	288	154	134	47%
18 and 19	170	86	84	49%
20 to 24	404	195	209	52%
25 to 29	362	193	169	47%
30 to 34	335	179	156	47%
35 to 39	312	163	149	48%
40 to 44	296	141	155	52%
45 to 49	295	138	157	53%
50 to 54	317	163	154	49%
55 to 59	245	114	131	53%
60 and 61	82	48	34	41%
62 to 64	147	61	86	59%
65 to 69	196	90	106	54%
70 to 74	138	63	75	54%
75 to 79	114	50	64	56%
80 to 84	102	38	64	63%
85 and older	113	33	80	71%
Under 18	1,298	663	635	49%
65 and older	663	274	389	59%
Median age	33.4	32.0	35.0	-

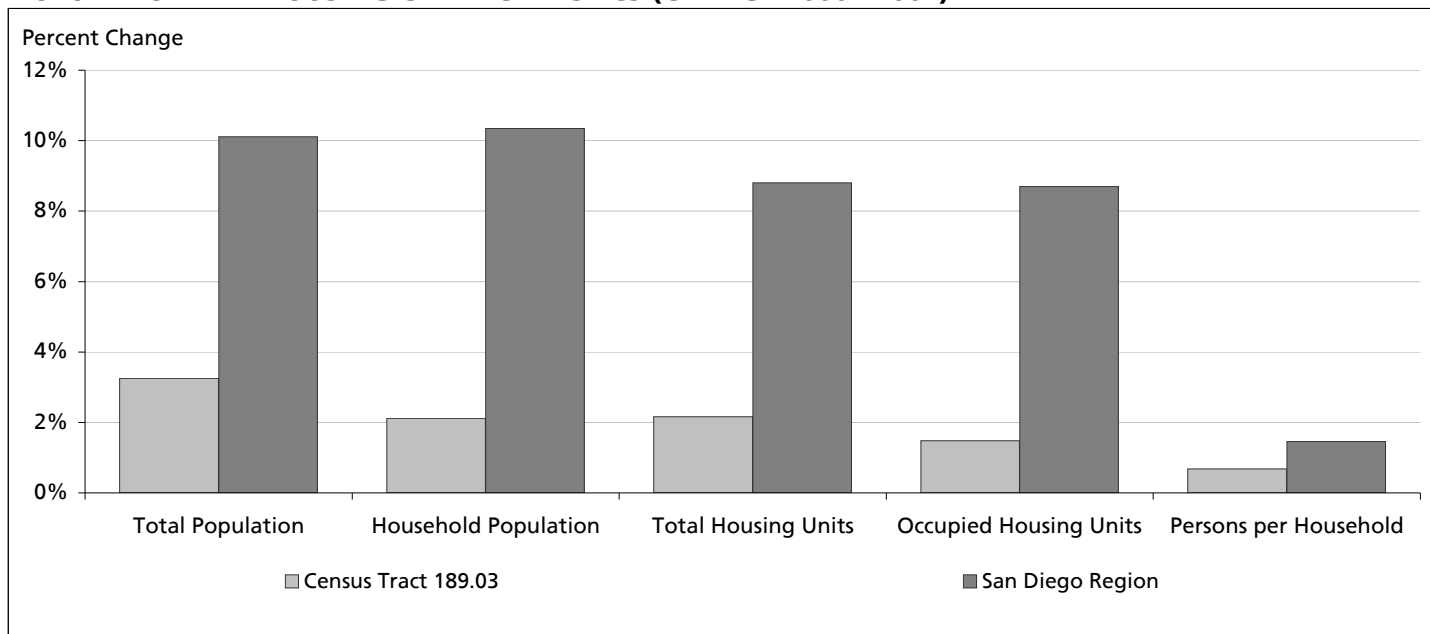
POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	2,204	2,448	66	15	58	135
Under 5	201	54	1	0	2	28
5 to 9	188	106	7	0	3	17
10 to 14	215	163	13	0	1	11
15 to 17	165	105	7	0	3	8
18 and 19	86	74	4	0	0	6
20 to 24	193	180	6	2	2	21
25 to 29	180	159	5	2	4	12
30 to 34	195	122	5	2	2	9
35 to 39	203	93	5	2	7	2
40 to 44	159	122	3	1	7	4
45 to 49	117	162	1	1	7	7
50 to 54	85	216	4	1	5	6
55 to 59	59	180	2	1	3	0
60 and 61	20	57	2	1	2	0
62 to 64	36	108	0	1	1	1
65 to 69	38	153	1	0	3	1
70 to 74	43	93	0	0	2	0
75 to 79	17	94	0	1	1	1
80 to 84	3	99	0	0	0	0
85 and older	1	108	0	0	3	1
Under 18	769	428	28	0	9	64
65 and older	102	547	1	1	9	3
Median age	26.5	46.4	20.8	38.8	43.6	19.1

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

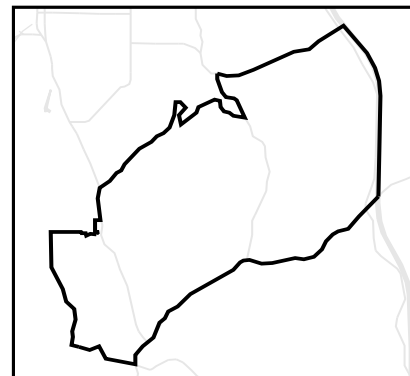
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Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 188.02



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	7,350	8,540	1,190	16.2%
Household Population	7,334	8,514	1,180	16.1%
Group Quarters Population	16	26	10	62.5%
Total Housing Units	3,077	3,601	524	17.0%
Single Family - Detached	--	2,777	--	--
Single Family - Multiple-Unit	--	326	--	--
Multi-Family	--	284	--	--
Mobile Home and Other	--	214	--	--
Occupied Housing Units	2,917	3,409	492	16.9%
Single Family - Detached	--	2,683	--	--
Single Family - Multiple-Unit	--	317	--	--
Multi-Family	--	206	--	--
Mobile Home and Other	--	203	--	--
Vacancy Rate	5.2%	5.3%	0.1%	1.9%
Persons per Household	2.51	2.50	-0.01	-0.4%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	237	227	-10	-4.2%
\$15,000-\$29,999	308	313	5	1.6%
\$30,000-\$44,999	323	366	43	13.3%
\$45,000-\$59,999	318	371	53	16.7%
\$60,000-\$74,999	396	348	-48	-12.1%
\$75,000-\$99,999	425	493	68	16.0%
\$100,000-\$124,999	381	380	-1	-0.3%
\$125,000-\$149,999	158	278	120	75.9%
\$150,000-\$199,999	179	332	153	85.5%
\$200,000 or more	192	301	109	56.8%
Total Households	2,917	3,409	492	16.9%
Median Household Income				
Adjusted for inflation (1999 \$)	\$70,322	\$79,031	8,709	12.4%
Not adjusted for inflation (current \$)	\$70,322	\$104,323	34,001	48.4%

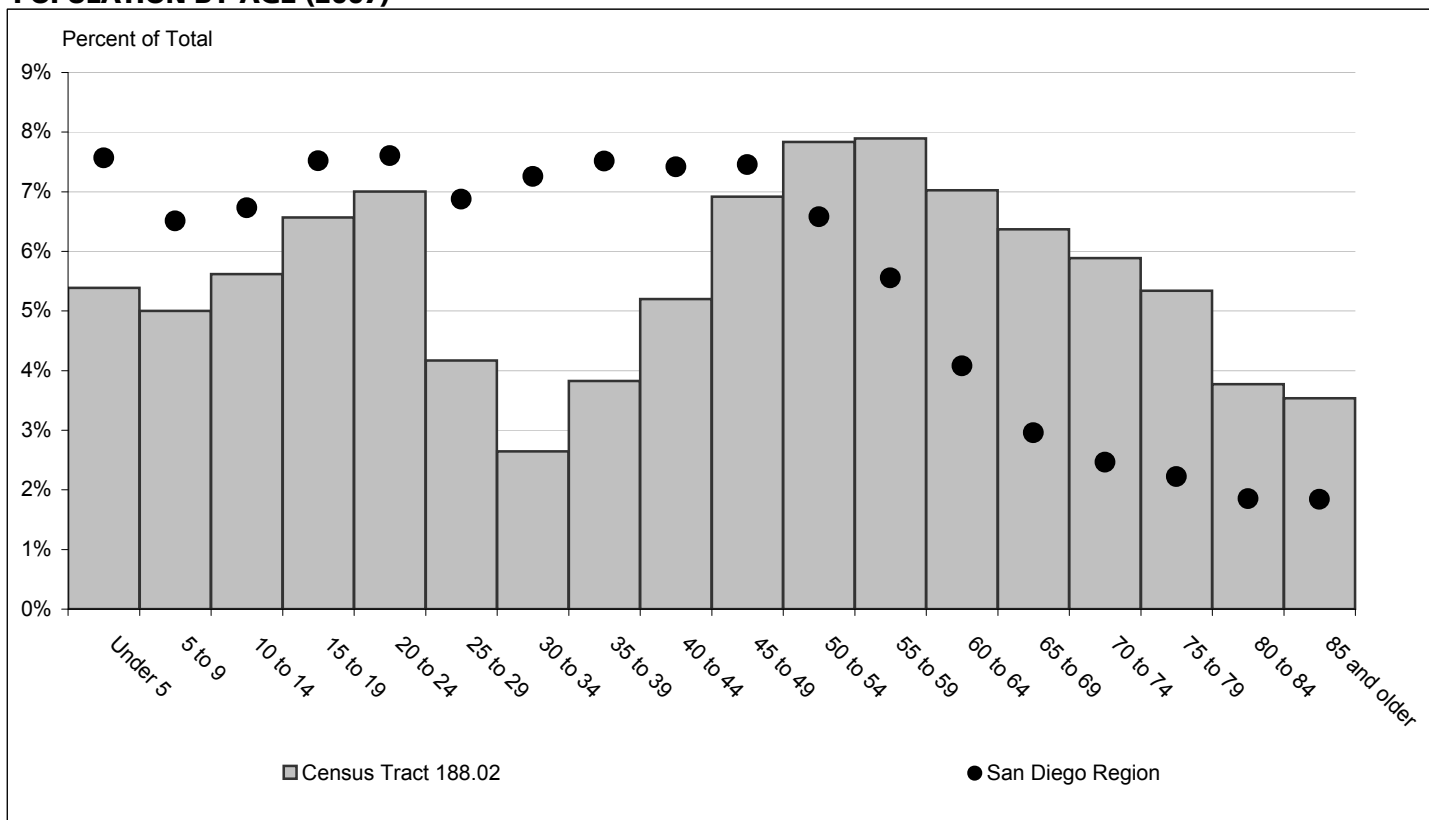
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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	8,540	4,122	4,418	52%
Under 5	460	219	241	52%
5 to 9	427	212	215	50%
10 to 14	480	232	248	52%
15 to 17	349	172	177	51%
18 and 19	212	114	98	46%
20 to 24	598	317	281	47%
25 to 29	356	186	170	48%
30 to 34	226	122	104	46%
35 to 39	327	148	179	55%
40 to 44	444	212	232	52%
45 to 49	591	267	324	55%
50 to 54	669	311	358	54%
55 to 59	674	323	351	52%
60 and 61	276	119	157	57%
62 to 64	324	164	160	49%
65 to 69	544	260	284	52%
70 to 74	503	271	232	46%
75 to 79	456	215	241	53%
80 to 84	322	165	157	49%
85 and older	302	93	209	69%
Under 18	1,716	835	881	51%
65 and older	2,127	1,004	1,123	53%
Median age	48.3	47.4	49.1	-

POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	901	7,260	38	35	187	119
Under 5	102	305	8	0	20	25
5 to 9	75	288	14	5	13	32
10 to 14	71	361	8	7	12	21
15 to 17	44	289	0	1	8	7
18 and 19	19	176	0	3	4	10
20 to 24	81	484	3	1	19	10
25 to 29	62	272	1	3	15	3
30 to 34	72	136	0	2	14	2
35 to 39	78	231	1	2	15	0
40 to 44	76	351	1	3	12	1
45 to 49	57	515	1	2	14	2
50 to 54	38	618	0	0	10	3
55 to 59	51	613	0	1	9	0
60 and 61	15	261	0	0	0	0
62 to 64	5	316	0	0	3	0
65 to 69	10	528	0	2	3	1
70 to 74	30	462	1	1	7	2
75 to 79	10	439	0	0	7	0
80 to 84	3	319	0	0	0	0
85 and older	2	296	0	2	2	0
Under 18	292	1,243	30	13	53	85
65 and older	55	2,044	1	5	19	3
Median age	29.7	51.8	8.9	25.8	30.9	10.6

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

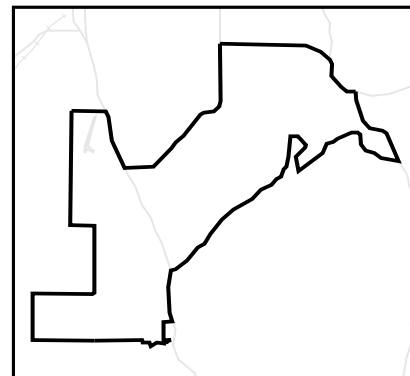
Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Census Tract 188.01



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Total Population	3,180	3,701	521	16.4%
Household Population	3,175	3,687	512	16.1%
Group Quarters Population	5	14	9	180.0%
Total Housing Units	1,154	1,343	189	16.4%
Single Family - Detached	--	1,235	--	--
Single Family - Multiple-Unit	--	18	--	--
Multi-Family	--	90	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	1,114	1,300	186	16.7%
Single Family - Detached	--	1,212	--	--
Single Family - Multiple-Unit	--	14	--	--
Multi-Family	--	74	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	3.5%	3.2%	-0.3%	-8.6%
Persons per Household	2.85	2.84	-0.01	-0.4%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change Numeric	Percent
Households by Income Category				
Less than \$15,000	138	150	12	8.7%
\$15,000-\$29,999	66	78	12	18.2%
\$30,000-\$44,999	89	101	12	13.5%
\$45,000-\$59,999	124	143	19	15.3%
\$60,000-\$74,999	148	191	43	29.1%
\$75,000-\$99,999	242	229	-13	-5.4%
\$100,000-\$124,999	132	193	61	46.2%
\$125,000-\$149,999	59	77	18	30.5%
\$150,000-\$199,999	80	64	-16	-20.0%
\$200,000 or more	36	74	38	105.6%
Total Households	1,114	1,300	186	16.7%
Median Household Income				
Adjusted for inflation (1999 \$)	\$74,189	\$73,979	-210	-0.3%
Not adjusted for inflation (current \$)	\$74,189	\$97,654	23,465	31.6%

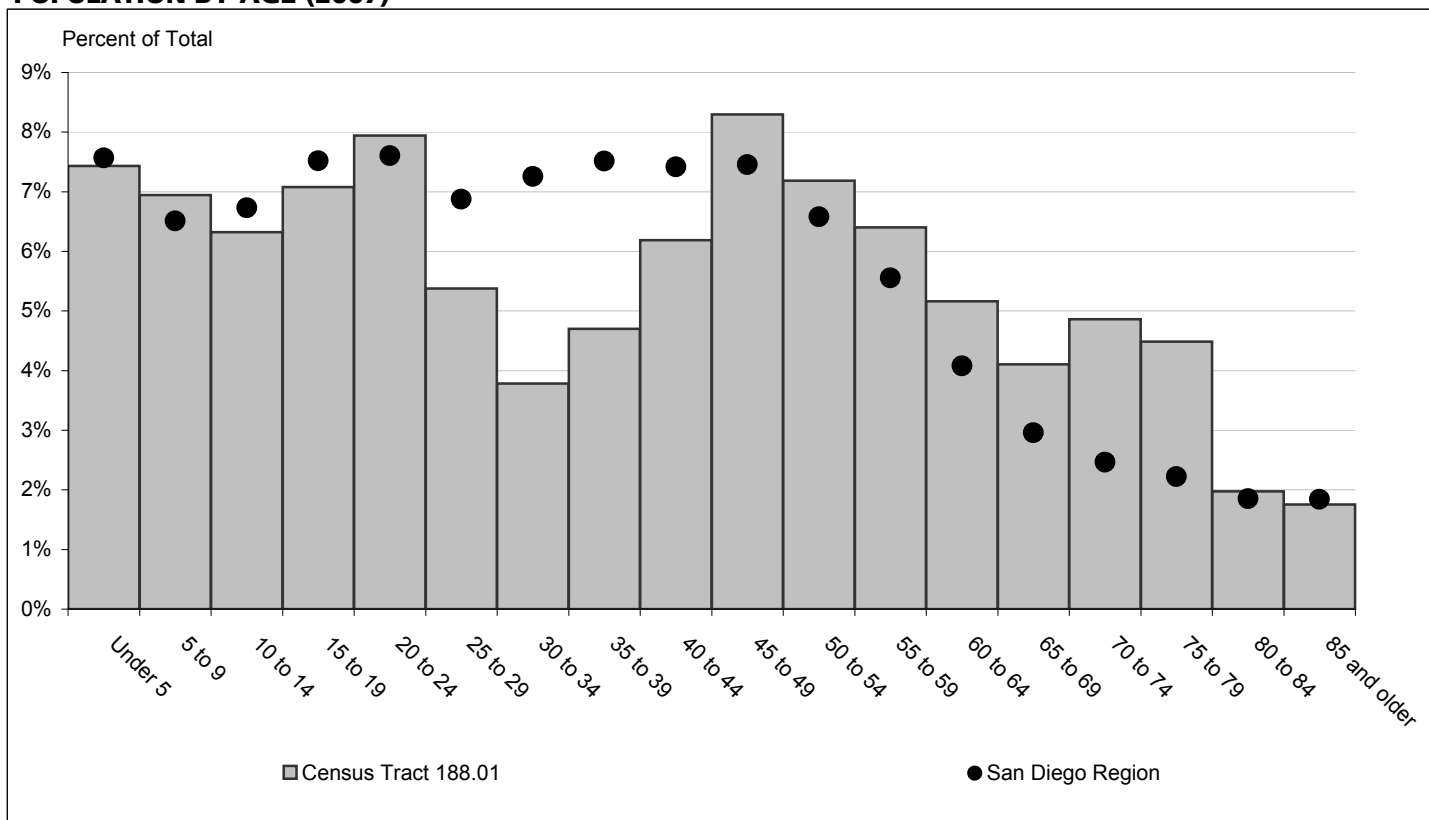
ADVISORY:

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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	3,701	1,868	1,833	50%
Under 5	275	138	137	50%
5 to 9	257	129	128	50%
10 to 14	234	130	104	44%
15 to 17	150	72	78	52%
18 and 19	112	53	59	53%
20 to 24	294	157	137	47%
25 to 29	199	115	84	42%
30 to 34	140	79	61	44%
35 to 39	174	79	95	55%
40 to 44	229	104	125	55%
45 to 49	307	144	163	53%
50 to 54	266	127	139	52%
55 to 59	237	117	120	51%
60 and 61	76	31	45	59%
62 to 64	115	57	58	50%
65 to 69	152	74	78	51%
70 to 74	180	94	86	48%
75 to 79	166	92	74	45%
80 to 84	73	42	31	42%
85 and older	65	34	31	48%
Under 18	916	469	447	49%
65 and older	636	336	300	47%
Median age	40.3	38.9	41.3	-

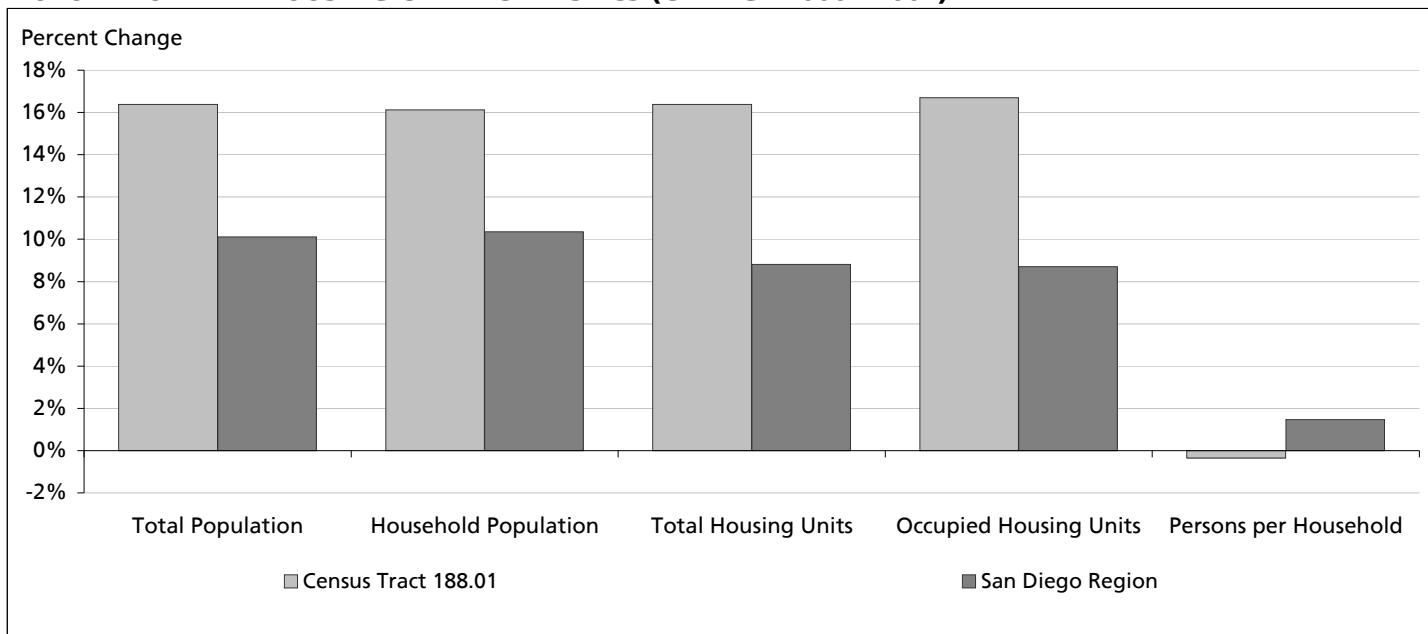
POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	606	2,874	15	22	97	87
Under 5	83	147	7	0	19	19
5 to 9	57	147	0	12	12	29
10 to 14	59	146	4	5	10	10
15 to 17	34	100	0	0	8	8
18 and 19	25	82	0	1	0	4
20 to 24	47	231	0	0	13	3
25 to 29	65	127	2	0	4	1
30 to 34	51	78	0	0	8	3
35 to 39	61	111	0	0	2	0
40 to 44	32	195	0	0	1	1
45 to 49	29	269	0	1	6	2
50 to 54	27	235	0	0	2	2
55 to 59	10	221	0	2	3	1
60 and 61	1	75	0	0	0	0
62 to 64	1	114	0	0	0	0
65 to 69	4	146	0	0	1	1
70 to 74	8	165	1	1	4	1
75 to 79	9	153	1	0	3	0
80 to 84	3	67	0	0	1	2
85 and older	0	65	0	0	0	0
Under 18	233	540	11	17	49	66
65 and older	24	596	2	1	9	4
Median age	24.8	46.4	10.6	9.6	19.7	9.2

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

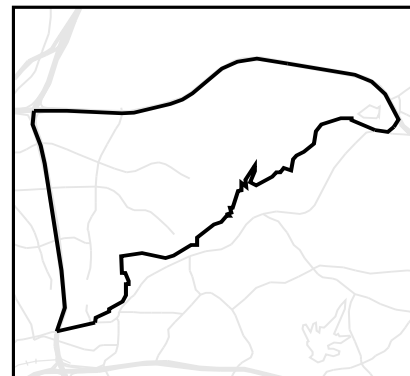
Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

POPULATION AND HOUSING ESTIMATES

Tierrasanta Community Planning Area

City of San Diego



POPULATION AND HOUSING (2000 and 2007)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Total Population	30,430	29,218	-1,212	-4.0%
Household Population	30,416	29,196	-1,220	-4.0%
Group Quarters Population	14	22	8	57.1%
Total Housing Units	11,069	11,432	363	3.3%
Single Family - Detached	--	4,725	--	--
Single Family - Multiple-Unit	--	3,777	--	--
Multi-Family	--	2,930	--	--
Mobile Home and Other	--	0	--	--
Occupied Housing Units	10,635	10,989	354	3.3%
Single Family - Detached	--	4,661	--	--
Single Family - Multiple-Unit	--	3,651	--	--
Multi-Family	--	2,677	--	--
Mobile Home and Other	--	0	--	--
Vacancy Rate	3.9%	3.9%	0.0%	0.0%
Persons per Household	2.86	2.66	-0.20	-7.0%

NOTE: Starting in 2007, SANDAG will begin tracking housing structure type based on new definitions. Data for the new structure types are not comparable with information from the 2000 Census or SANDAG's Forecast. New definitions are described on page 3.

HOUSEHOLD INCOME (real 1999 dollars, adjusted for inflation)

	April 1 2000 Census	January 1 2007	2000 to 2007 Change	
			Numeric	Percent
Households by Income Category				
Less than \$15,000	556	533	-23	-4.1%
\$15,000-\$29,999	1,238	1,218	-20	-1.6%
\$30,000-\$44,999	1,945	1,979	34	1.7%
\$45,000-\$59,999	1,719	1,708	-11	-0.6%
\$60,000-\$74,999	1,489	1,757	268	18.0%
\$75,000-\$99,999	1,279	1,396	117	9.1%
\$100,000-\$124,999	1,081	1,013	-68	-6.3%
\$125,000-\$149,999	510	495	-15	-2.9%
\$150,000-\$199,999	538	558	20	3.7%
\$200,000 or more	280	332	52	18.6%
Total Households	10,635	10,989	354	3.3%
Median Household Income				
Adjusted for inflation (1999 \$)	\$58,774	\$60,482	1,708	2.9%
Not adjusted for inflation (current \$)	\$58,774	\$79,838	21,064	35.8%

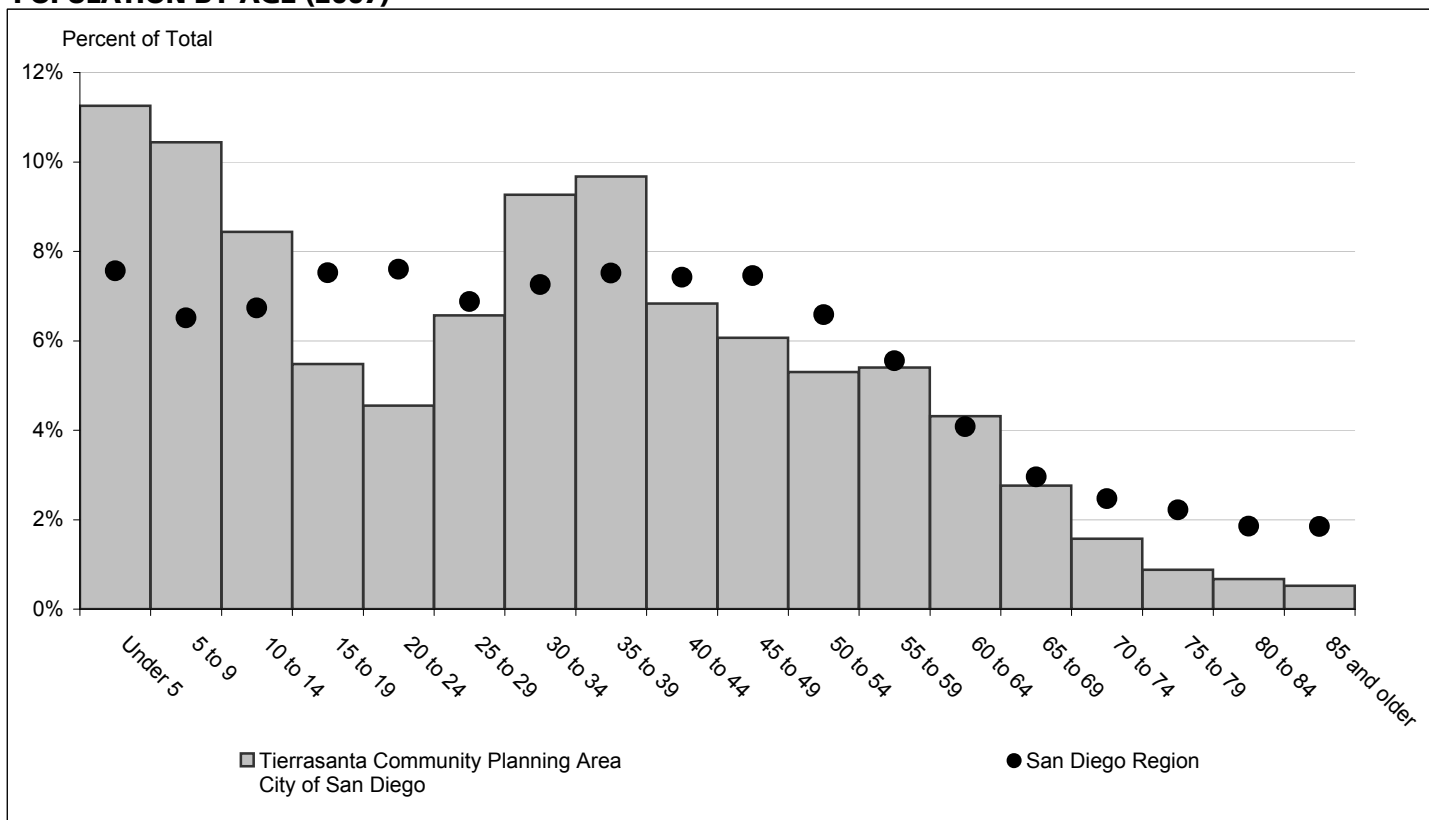
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POPULATION BY GENDER AND AGE (2007)

	Total	Male	Female	Percent Female
Total Population	29,218	14,388	14,830	51%
Under 5	3,289	1,688	1,601	49%
5 to 9	3,051	1,539	1,512	50%
10 to 14	2,465	1,231	1,234	50%
15 to 17	1,073	501	572	53%
18 and 19	528	280	248	47%
20 to 24	1,329	677	652	49%
25 to 29	1,920	929	991	52%
30 to 34	2,707	1,377	1,330	49%
35 to 39	2,826	1,413	1,413	50%
40 to 44	1,996	1,008	988	49%
45 to 49	1,772	878	894	50%
50 to 54	1,550	698	852	55%
55 to 59	1,579	688	891	56%
60 and 61	554	258	296	53%
62 to 64	707	332	375	53%
65 to 69	806	387	419	52%
70 to 74	460	238	222	48%
75 to 79	258	134	124	48%
80 to 84	196	73	123	63%
85 and older	152	59	93	61%
Under 18	9,878	4,959	4,919	50%
65 and older	1,872	891	981	52%
Median age	31.8	31.3	32.3	-

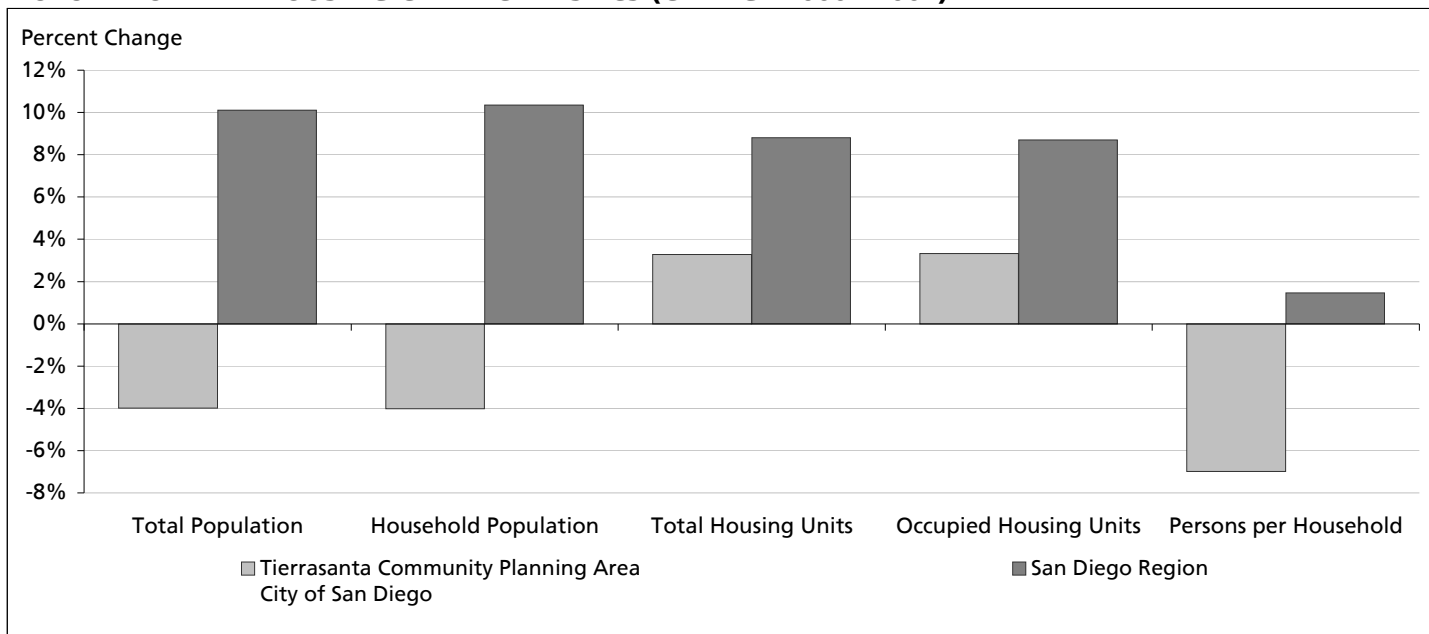
POPULATION BY AGE (2007)



POPULATION BY RACE, ETHNICITY AND AGE (2007)

	Hispanic	White	Black	Non-Hispanic		
				American Indian	Asian & Pacific Isl.	Other
Total Population	3,107	19,563	2,145	80	3,086	1,237
Under 5	548	1,894	296	11	277	263
5 to 9	445	1,733	314	6	246	307
10 to 14	376	1,309	329	7	207	237
15 to 17	138	616	116	4	115	84
18 and 19	75	322	42	2	46	41
20 to 24	199	800	76	6	181	67
25 to 29	323	1,113	166	9	238	71
30 to 34	346	1,728	245	11	321	56
35 to 39	284	1,832	280	11	383	36
40 to 44	91	1,480	128	7	274	16
45 to 49	72	1,396	63	1	223	17
50 to 54	68	1,253	31	0	190	8
55 to 59	54	1,355	22	2	140	6
60 and 61	4	505	3	0	42	0
62 to 64	18	628	2	0	52	7
65 to 69	31	703	10	2	57	3
70 to 74	23	359	15	0	52	11
75 to 79	7	221	4	0	22	4
80 to 84	3	177	1	0	12	3
85 and older	2	139	2	1	8	0
Under 18	1,507	5,552	1,055	28	845	891
65 and older	66	1,599	32	3	151	21
Median age	19.2	35.7	18.8	27.2	33.6	11.0

POPULATION AND HOUSING CHARACTERISTICS (CHANGE 2000 - 2007)



New Housing Structure Type Definitions in 2007:

Single Family - Detached: Traditional detached single family housing units.

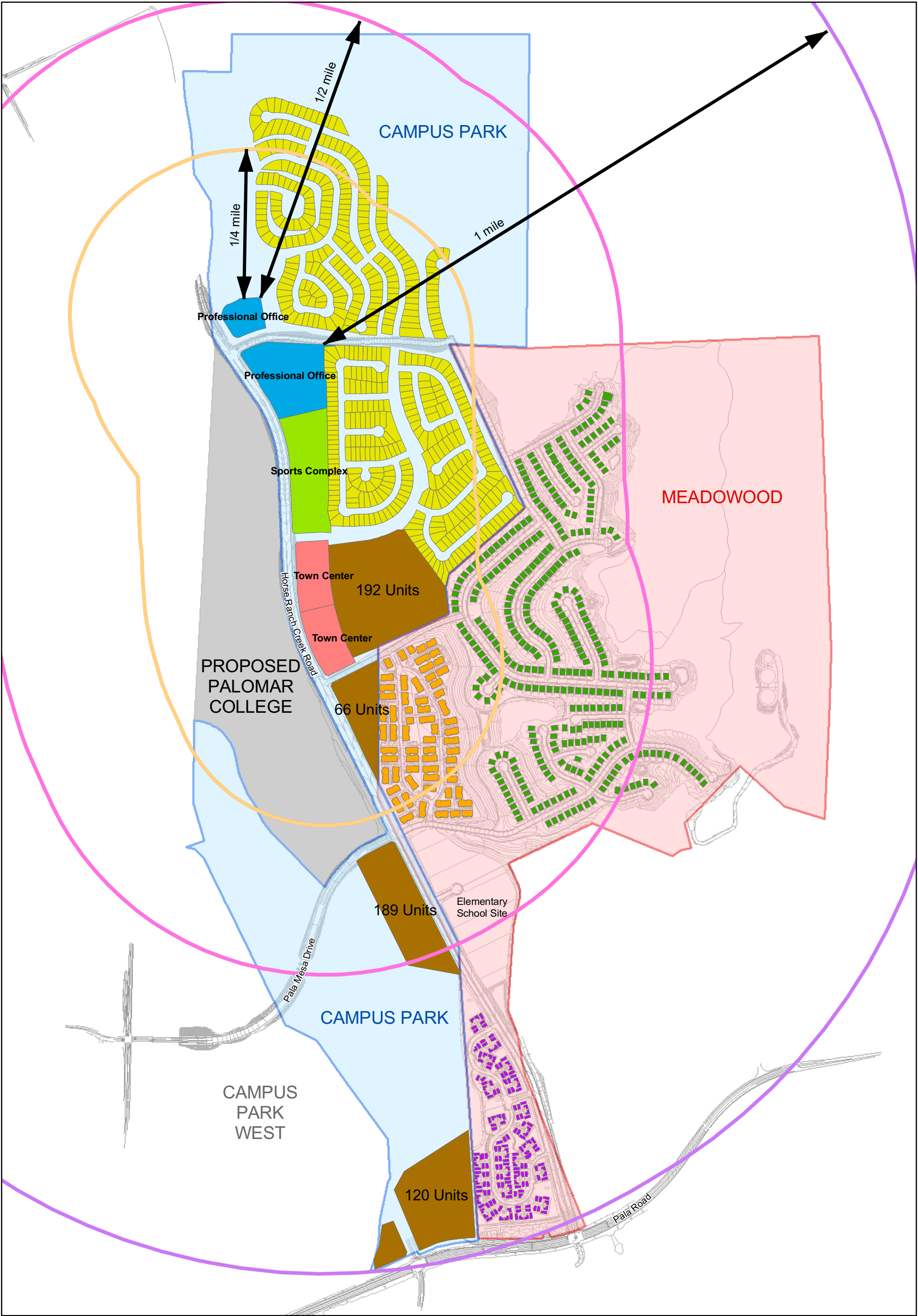
Single Family - Multiple Unit: Includes single family attached housing units, duplexes, townhouses, and lower density condominium developments (generally less than 12 units per acre)

Multi-Family: Apartments and higher density condominium developments (generally more than 12 units per acre)

Mobile Home and Other: Mobile homes in mobile home parks, boats, and other housing not elsewhere classified.

ATTACHMENT C

GIS MAP SHOWING $\frac{1}{4}$, $\frac{1}{2}$, AND 1 MILE BUFFERS AROUND SHOPS, OFFICES, AND RETAIL USES



Meadowood (TM 5354) Traffic Study Appendix

Meadowood Building Types

- Casas
- Multi-Family
- Single-Family

Campus Park Residential Units

- Multi-Family
- Single-Family

Campus Park Land Uses

- Professional Office
- Sports Complex
- Town Center

Proximity to Campus Park Land Use

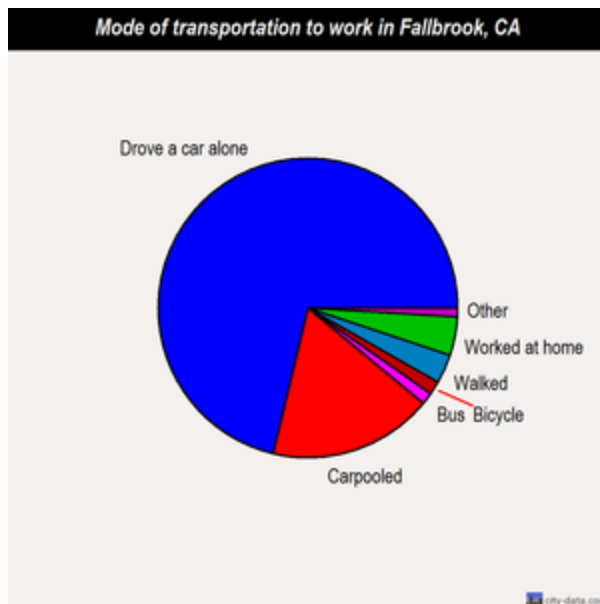
- 0.25 mile
- 0.5 mile
- 1.0 mile

0 Feet 800



ATTACHMENT D

FALLBROOK SURVEY RESULTS



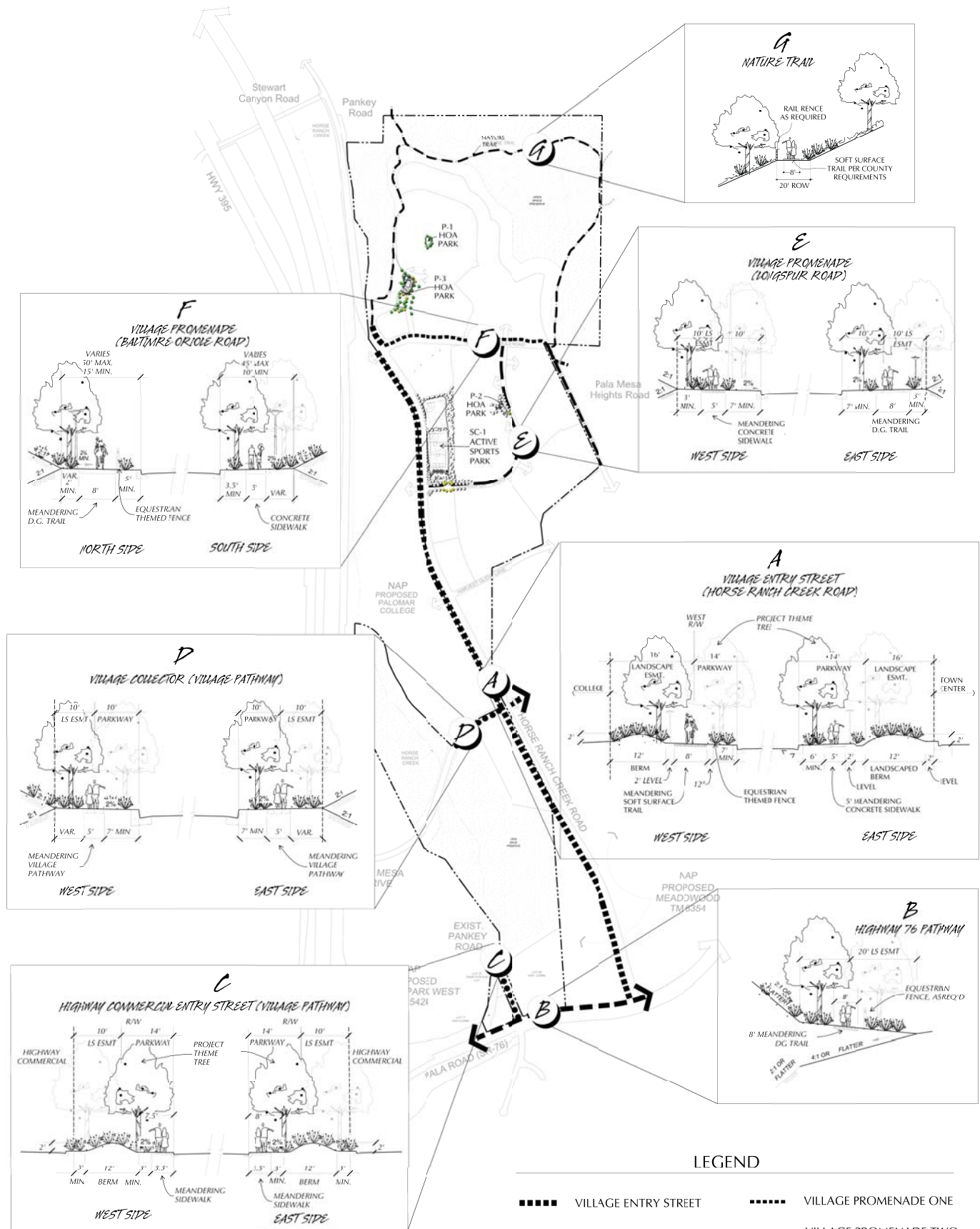
Means of transportation to work

- Drove a car alone: 8,583 (71%)
- Carpooled: 2,136 (18%)
- Bus or trolley bus: 156 (1%)
- Streetcar or trolley car: 12 (0%)
- Railroad: 7 (0%)
- Taxi: 8 (0%)
- Motorcycle: 31 (0%)
- Bicycle: 175 (1%)
- Walked: 377 (3%)
- Other means: 56 (0%)
- Worked at home: 503 (4%)

Source: <http://www.city-data.com/housing/houses-Fallbrook-California.html>

ATTACHMENT E

CAMPUS PARK AND MEADOWOOD TRAIL EXHIBITS

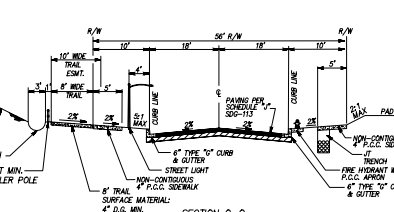
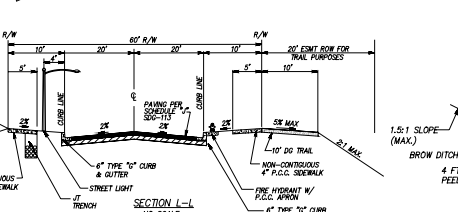
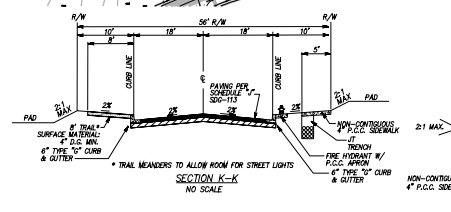
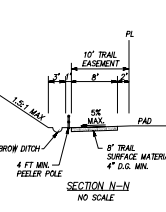
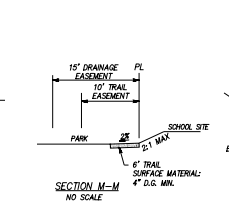
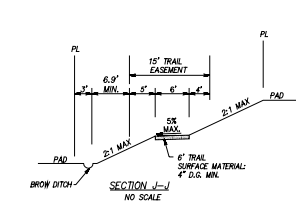
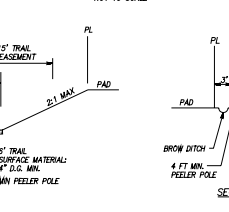
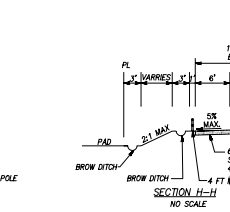
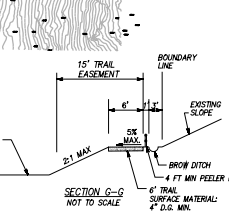
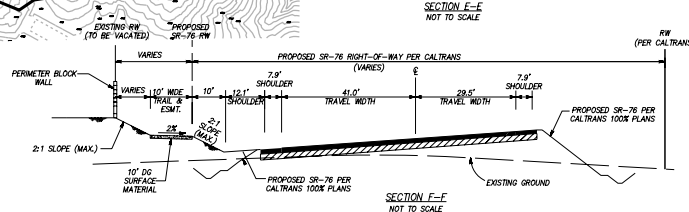
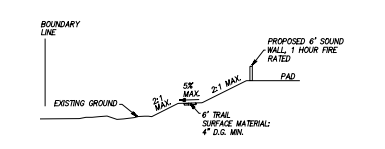
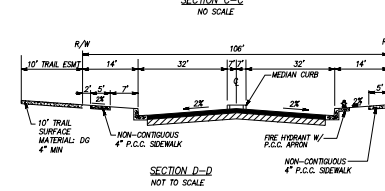
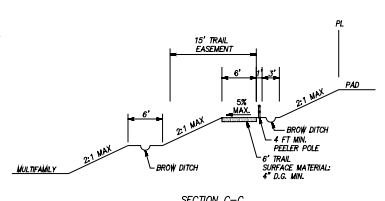
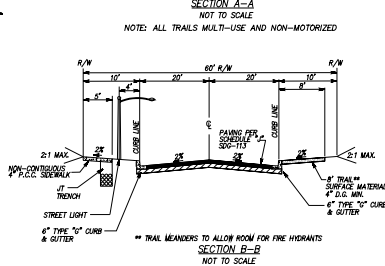
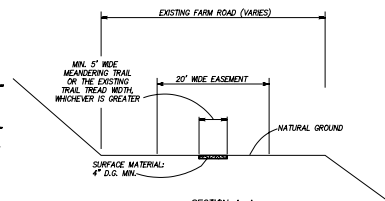
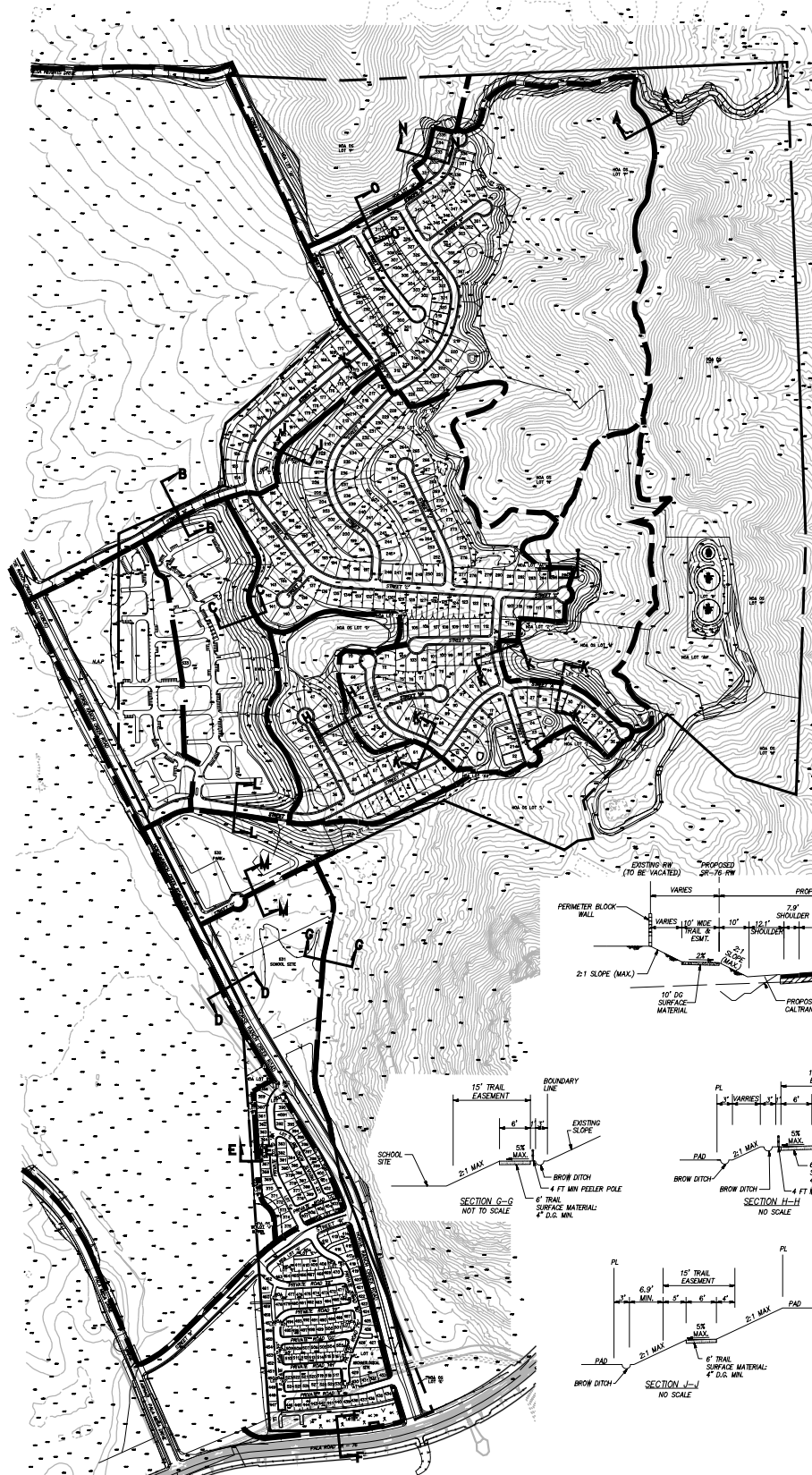


Note: This concept plan for illustration purposes only. Actual site development may vary from concepts depicted on this exhibit.

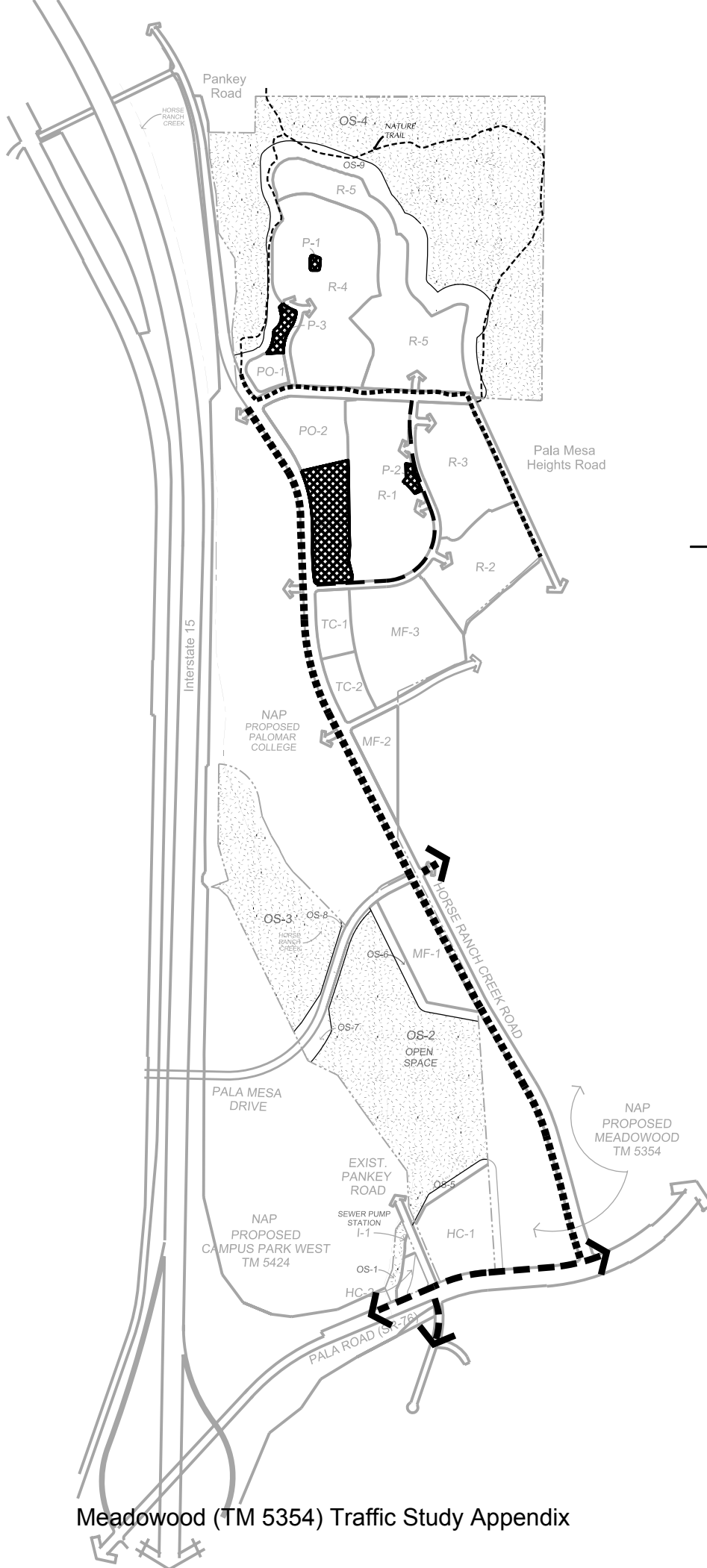
LEGEND

PROJECT BOUNDARY
PUBLIC TRAIL
PRIVATE TRAIL

TRAIL EXHIBIT MEADOWOOD

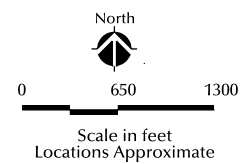


1000' SCALE



LEGEND

- VILLAGE ENTRY STREET
- HIGHWAY 76 PATHWAY
- SECONDARY VILLAGE ENTRY
- VILLAGE PROMENADE ONE
- VILLAGE PROMENADE TWO
- - - NATURE TRAILS
- OPEN SPACE
- ▣ NEIGHBORHOOD PARK SITE





County of San Diego

JOHN L. SNYDER
DIRECTOR

DEPARTMENT OF PUBLIC WORKS

5201 RUFFIN ROAD, SUITE D
SAN DIEGO, CALIFORNIA 92123-4310
(858) 694-2055 FAX: (858) 694-8928
Web Site: sdcdpw.org

RICHARD E. CROMPTON
ASSISTANT DIRECTOR

March 7, 2008

LOS Engineering, Inc.
Traffic and Transportation
5114 Sea Mist Court
San Diego, CA 92121

Dear Project Engineer:

CAMPUS PARK (TM 5338) AND MEADOWOOD (TM 5354) – INTERNAL CAPTURE RATE

DPW staff has reviewed the response letter prepared by LOS Engineering dated February 5, 2008 regarding the proposed internal capture rate for the Campus Park and Meadowood projects. The letter provides responses to our division's previous comment letter dated January 17, 2008. The following are our comments:

- The proposed 33% internal capture rate appears to be within a potentially acceptable range for the buildout/Year 2030 scenario assumption. Caltrans staff should review and comment on the current submittal in order to determine a final internal capture rate percentage that is acceptable to all interested parties.
- The letter states that the capture rate percentage for the near-term scenarios such as Existing plus Project and near-term cumulative would be based on a ratio between residential and commercial uses. For example, if half the commercial and all residential uses are constructed; that particular phase would incorporate half of the 'buildout 33% internal capture rate' for the near-term scenario. The consultant should provide recommended capture rate percentages for the near-term scenarios based on the proposed ratio methodology. Overall, it should be assumed that the internal capture rate percentages would start off lower for the individual projects (Existing plus project) and gradually increase over time to the buildout/Year 2030 levels.
- Non-vehicular traffic counts or surveys should also be included to document the amount of walk and bicycle trips conducted within the one-mile buffer zone.

If we can answer any questions or provide further information, please contact Nick Ortiz at (858) 874-4204.

Very truly yours,



Nael Areigat, Project Manager
Department of Public Works

NA: SH

cc: Bob Goralka/Nick Ortiz (O334); Jacob Armstrong, Caltrans (O240); Maurice Eaton, Caltrans (O240); Christine Stevenson, DPLU (O650); TM 5338, 5354 File



Re: Internal Capture Rate for Meadowood and Campus Park

From: **Maurice Eaton** (maurice_eaton@dot.ca.gov)

Sent: Mon 4/14/08 9:53 AM

To: Justin Rasas (justin@losengineering.com)

Cc: Alan Ziegaus (aziegaus@swspr.com); Bruce Tabb (btabb@envdev.com); Christine Stevenson (County) (christine.stevenson@sdcounty.ca.gov); Nick Ortiz (francisco.ortiz@sdcounty.ca.gov); Jacob Armstrong (jacob_armstrong@dot.ca.gov); Jimmy Ayala (Pardee) (jimmy.ayala@pardeehomes.com); Karen Kosup (Pardee) (karen.kosup@pardeehomes.com); Nael Areigat (nael.areigat@sdcounty.ca.gov); David Davis (Winwood) (winwood-davis@msn.com)

Justin:

We are in agreement with the 30% internal trip capture rate for use in the traffic studies for the Meadowood and Campus Park projects. In agreeing to the 30% internal capture rate, it should be noted that this is a special case specifically for these two projects, and should not be considered the de facto internal capture rate or as setting precedent for other projects with impacts to State transportation facilities.

Maurice

Maurice Eaton, Branch Chief
Travel Forecasting and Modeling
Caltrans District 11, MS 240
4050 Taylor Street
San Diego, CA 92110
Tel. 619-688-3137, Calnet 8-688-3137
maurice.eaton@dot.ca.gov

Justin Rasas
<justin@losengineering.com>

04/14/2008 07:40
AM

"Maurice Eaton (Caltrans)"
<maurice_eaton@dot.ca.gov>

To

cc

Alan Ziegaus <aziegaus@swspr.com>,
Nick Ortiz
<francisco.ortiz@sdcounty.ca.gov>,
Nael Areigat
<nael.areigat@sdcounty.ca.gov>,
Bruce Tabb <btabb@envdev.com>,
"Christine Stevenson (County)"
<christine.stevenson@sdcounty.ca.gov>,
"David Davis (Winwood)"
<winwood-davis@msn.com>, Jacob
Armstrong
<jacob_armstrong@dot.ca.gov>,
"Jimmy Ayala (Pardee)"
<jimmy.ayala@pardeehomes.com>,
"Karen Kosup (Pardee)"
<karen.kosup@pardeehomes.com>